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Architectural Glimpses in Old Dalmatia

By Folger Johnson

THE boat schedule gives Dalmatia as twelve hours from Trieste; but the traveller upon reaching Zara, one of the first ports of call, finds that he has really been carried back hundreds of years to a land, somewhat forgotten by time, of beautiful campaniles, and little walled cities projecting into the sea, whose great town-gates are still used by the citizens.

In Dalmatia all architectural styles meet, and the native architect has appropriated them with so much originality and freedom that the result deserves to rank as a distinctive national style. The Dalmatian was not a copyist; everything he touched became his own.

The best way to enter Dalmatia is the slow way; for the freight-boats wander with apparent aimlessness down the coast, putting into curious old ports, where they lie beside the dock for hours, giving the traveller time to explore the narrow streets which rise from the water's edge and twist and climb back into the hills.

These maritime cities were in close contact with, first, Rome, then Byzantium, Lombardy, Hungary, Venice, and western Europe. From these sources the architecture of Dalmatia was widely influenced, and yet there are no reproductions, as each building bears a peculiarly Dalmatian stamp.

The eastern Adriatic owes a great deal to Rome. In many cases one can trace the classic influence back to its original sources, as much interesting Roman work is still preserved.

As one sails into the harbor at Pola there rises before him a magnificent Roman arena. Glistening in the sunlight across the sea are its gray-white walls reaching the imposing height of one hundred feet. The exterior is in very good preservation; the stone sockets of the awning-masts remain in place, and the original perforated slabs of marble still close some of the window openings. Through the arches one sees that the seats of Istrian stone, and with them many of the inner walls, have gone to build Pola's palaces, and in their place is a tangle of vines and wild flowers—an exchange that might cause disappointment to the archæologist, but rejoices the artist, for time has failed to rob this ruin of its inspiration, and the pillaging of stones to deprive it of its dignity.

Pola possesses other Roman monuments, two arches and a small temple. The Porta Aurea, used as a city-gate, was erected in the first century by the family of Sergii. It is only twenty-eight feet high, but the Corinthian order and the little Victory figures in the spandrels are so delicate of scale that the arch gives the impression of much greater size than it actually possesses. This monument is remarkably well preserved, and, although so far from Rome, embodies the best art of the period.

The Porta Gemina, or Twin Gates, is interesting because of its simplicity and the suppression of the architrave. It appears to have been left uncompleted. The keystones are not carved, and the projections of the ends of the entablature beyond the line of the columns suggest that it was the intention to strengthen the effect here by doubling the order.

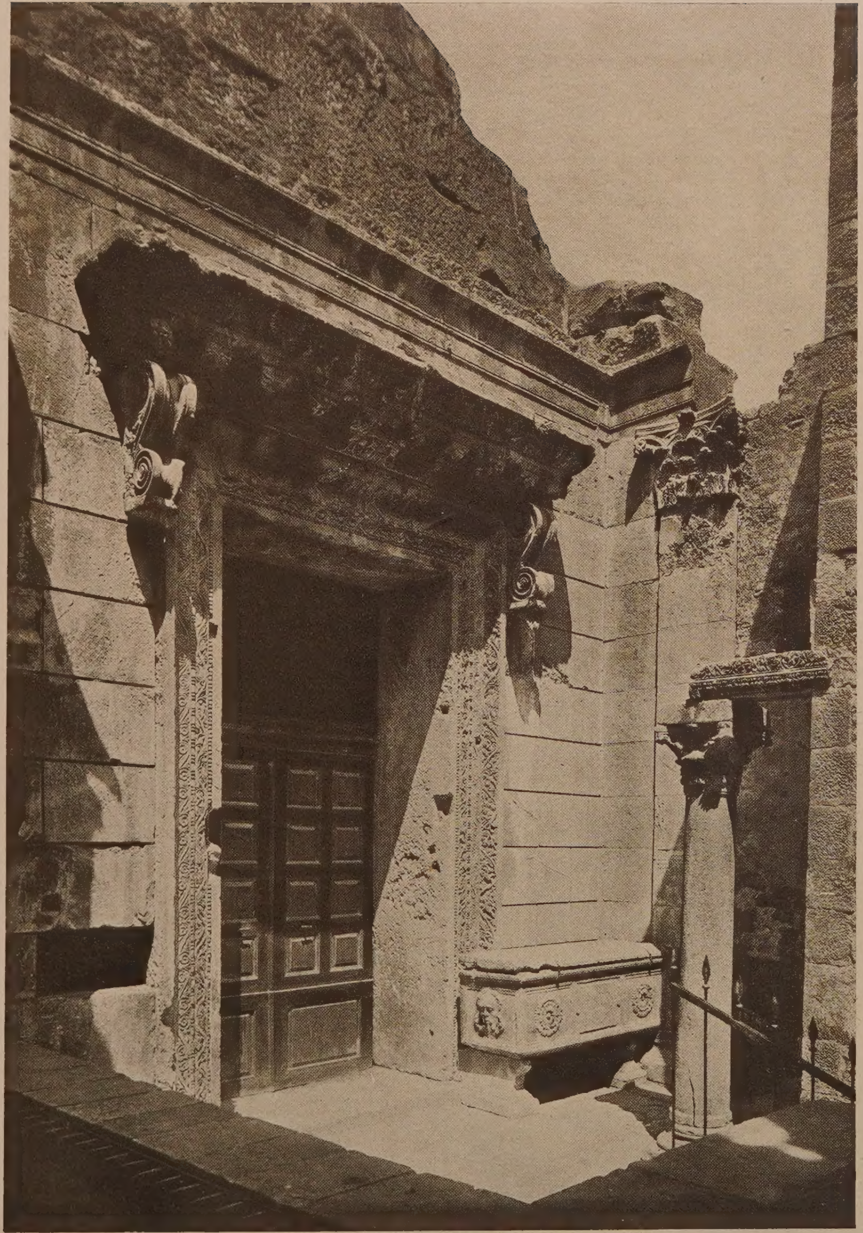
The temple of Augustus at Pola is a small Roman temple of the first century with a Corinthian-column portico twenty-three feet in height and a richly ornamental frieze. It recalls in its type the Maison Carré at Nîmes.

Standing close by is the Municipio, a fourteenth century building with an open loggia. In this, the simplicity of architectural detail so characteristic of this period in Dalmatia offers contrast to the richness of the Corinthian portico. The crowded piazza in the illustration is not an every-day scene in Pola, but pictures the reception given King Victor Emmanuel on his first visit to Pola after its annexation to Italy following the great war. Pola and Zara, and adjacent country, were given by the Treaty of Versailles to Italy; the rest of Dalmatia owes allegiance to King Alexander of Serbia.

Spalato also bears the impress of ancient Rome, for there Diocletian retired upon his abdication and built a most extraordinary palace, the remains of which are perhaps the most perfect example extant of Roman domestic architecture. In the Dark Ages, when the nearby city of Salona was destroyed by barbarians, its citizens sought refuge behind the walls of Diocletian's residence, and there their descendants have remained. So huge is this palace that three thousand people now live within its walls. To-day it forms the heart of the old town; the courtyard of the palace, with its handsome Corinthian peristyle, forms the main square of the city. The circular tomb, which Diocletian is said to have built for himself, serves as the cathedral, and the little temple the royal invalid erected to honor Aesculapius is now the baptistery.

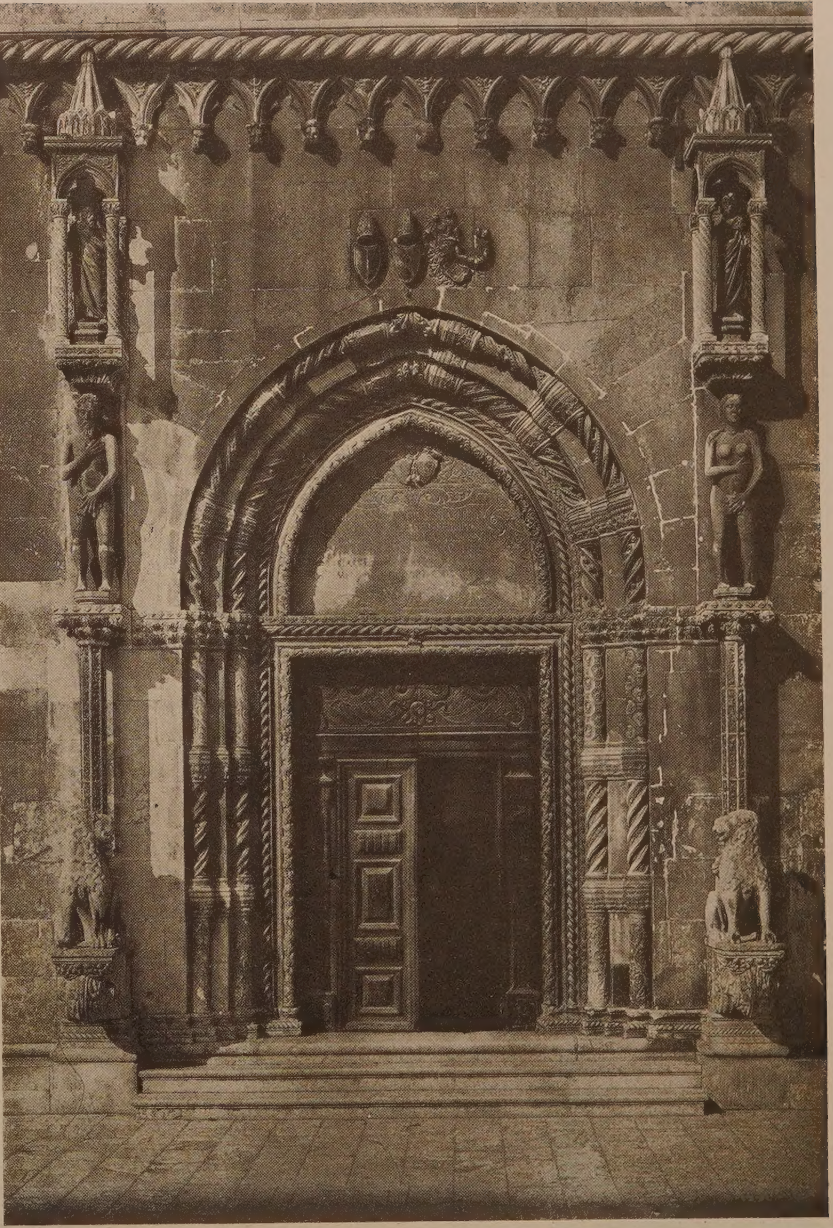
T. G. Jackson, the English authority on Dalmatian architecture, claims that this palace has influenced the subsequent architecture of Dalmatia, and certainly one can trace this influence in many of the domical churches along the coast.

The cathedral is an interesting domed edifice, partially surrounded by a Corinthian colonnade. It is somewhat reminiscent of the Pantheon, except that the dome, which is constructed of overlapping brick, lacks the opening in the centre. The platform on which the temple was built is reached by high steps giving an effective approach to the great carved doors added in the thirteenth century. Their



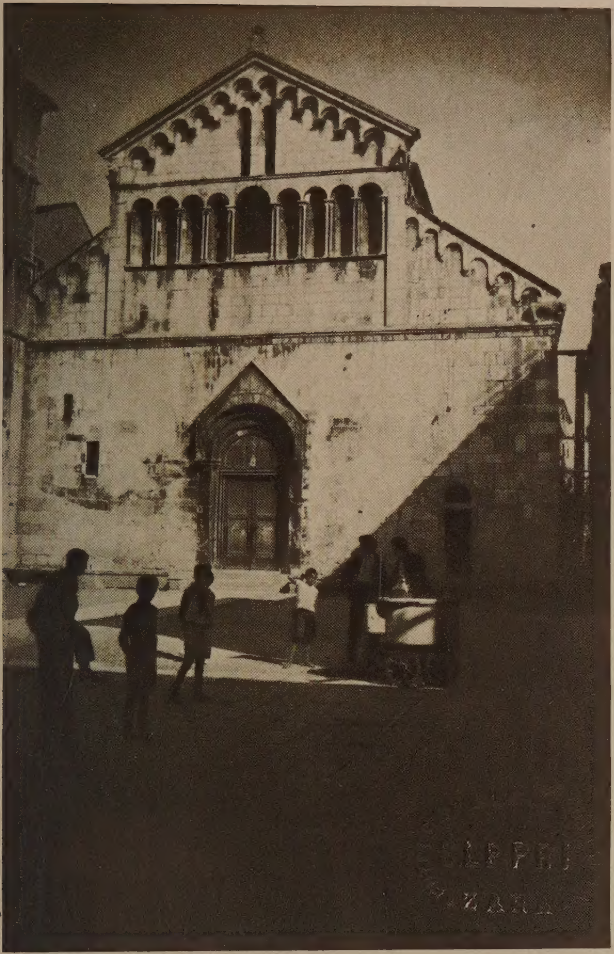
TEMPLE OF ÆSCULAPIUS IN DIOCLETIAN'S PALACE.

In this palace the old art died to give birth to the new, for here the classic begins to give way before the dawn of mediæval sentiment. It is apparent not only in the departure from classic proportions, but in the suppression of the entablature and in the springing of arches directly from the column capitals. Also found here is the zig-zag moulding so frequently employed later in Norman architecture, and for the first time is seen the second-hand use of columns and capitals.



LATERAL DOORWAY, CATHEDRAL OF SEBENICO.

Some of his work preceded that of Alberti at Rimini, and was contemporary with the Gothic Porta della Carta at Venice. He designed the façade of the cathedral at Sebenico in 1450, though it was not built until 1470. The stone barrel vaulting also belongs to Orsini's time; but the doorways and lateral façades are decidely Gothic in detail and were due to Messere Antonio.



Façade, San Grisogono at Zara.

beautiful workmanship loses nothing by comparison with the pagan frieze placed by Diocletian on the interior.

After one has been to Dalmatia he understands why the Lion in the Piazza of St. Mark's is facing the east. He is gazing across the Adriatic at his reflections—those lions of St. Mark's which stand carved over the gateways of nearly every Dalmatian city testifying to the onetime authority of Venice in the Adriatic. Venice exercised a greater influence than any other city upon the Dalmatian architect, partly because of her political supremacy, but equally so because of a similarity of race and taste.

That Dalmatia was keeping pace with Venice, and not blindly following her, is shown by the work of Messere Antonio and Giorgio Orsini at Sebenico, where the Duomo, by these great artists, antedates the Miracoli at Venice by ten years, and yet shows a remarkable likeness to it. Orsini had visited Italy during the early flowering of the Renaissance, and so clearly did he grasp the trend of the style that he returned to work it out exactly as did his Italian fellow-craftsmen a few years later. Orsini deserves recognition as an important leader of the Renaissance movement.

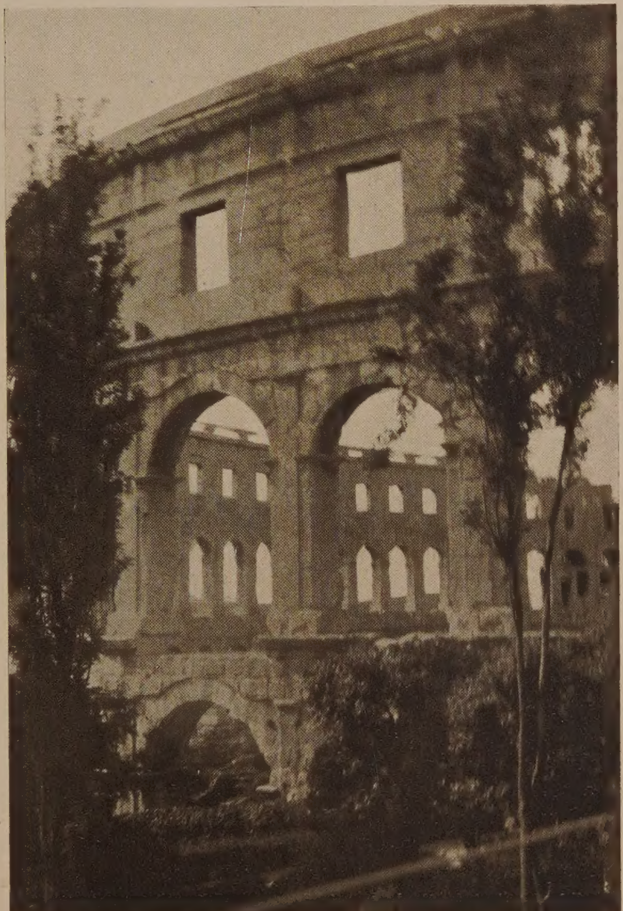
Orsini's influence is further shown in the conventual church of Santa Maria at Zara, in which the detail is Renaissance, with the exception of the rose window of the west front. The buttressed side walls of this and the Sebenico church have been reduced to mere pilasters suggesting distinctly the Venetian type to which both of these churches belong.

In this, too, Dalmatia kept her individuality, for Renaissance of the eastern Adriatic did not go to Palladian severity, but retained a certain freedom of expression and the picturesque quality of Gothic.

Dalmatia was loath to relinquish the Venetian Gothic in her domestic buildings, and every town along the seaboard contains some charming and graceful bit of semi-oriental architecture. In the narrow streets, sculptured doorways open into Venetian courtyards and one catches glimpses of carved stone stairways and fine well-heads. Rare bronze knockers are sometimes found upon the doors. That of the Palazzo Aneri in Curzola would do credit to a Cellini, so delicately modelled and finely wrought is the Neptune standing between two dolphins.

Zara, rich in old churches and campaniles, and Curzola, whose walls still look strong enough to stand a siege, but were not strong enough to save Marco Polo from the Genoese in 1298, have each a quaint mediæval charm. Entrance to these cities is made through splendid town-gates. The Porta di Terraferma at Zara, designed by the Veronese architect Michele San Michele, in 1543, is hardly matched by any gate in Italy. It is a bold treatment of the Doric order and is certainly a more striking gate than San Michele's famous Porta del Palio in Verona, so admired by Goethe.

The churches of these towns range historically from Pisan Romanesque to the late Renaissance; in most of them however a distinct Venetian influence may be traced. Perhaps the most interesting example of the Romanesque is the cathedral at Zara, which is a basilica structure with an excellent façade. It dates from the thirteenth century, when crusaders partially destroyed the town and left funds for the

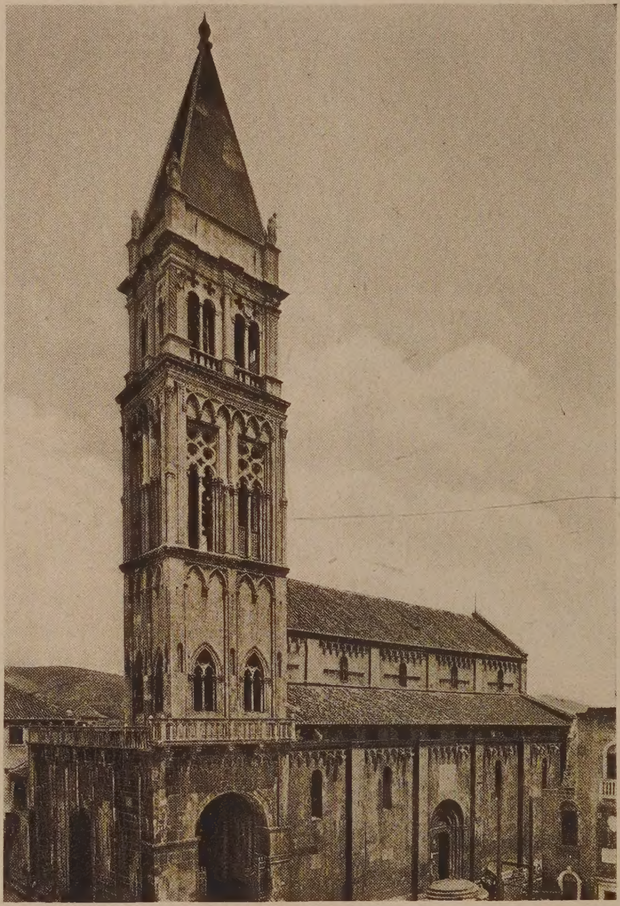


Roman Arena, Pola.

rebuilding of this church. The main façade is interesting in composition and detail. It is pierced by three Romanesque doorways and two rose windows, the latter being framed in decorative wall arcades, the columns of which are even more slender than those at Pisa.

The cathedrals of Curzola and Trau, later structures, extend into the Gothic period. The former has a splendid early Gothic doorway. A unique feature is that the lions, instead of supporting the columns, as was usual in the doorways of north Italy, surmount the order and repose restfully on stone brackets. These columns bear the knotted twist of the Commaccine guild. The spiral shafts about the doorway itself stand out in striking relief and frame pleasingly the entire opening, in the spandrel of which is seated the figure of a bishop.

There is no single feature of the Dalmatian coast that lingers more pleasantly in the mind of the traveller than do the campaniles of these old churches. First seen from the water, they dominate the little towns, rising gracefully above the buildings that are usually clustered about the base.


Cathedral at Trau.

Many of these campaniles are well conceived and exquisitely carried out. In effect, they stand between the low pitched roof of the Pisan tower and the elongated spire; possessing both grace and solidity to an exceptional degree. The treatment of the pyramidal top was undoubtedly suggested by the campanile of St. Mark's at Venice. This idea was seized upon by the Dalmatian architects and generally adopted. There are certain exceptions, notably the campaniles of Curzola and that of the Madonna della Salute at Zara, which show a distinct Byzantine influence in their domelike terminations.

Of the Romanesque type perhaps the most pleasing are those of Spalato and Zara. The former is extremely difficult to photograph because the intervening walls of Diocletian's palace make it impossible to secure anything more than the upper stages. It dates from the twelfth and fourteenth centuries. Here are found columns resting on backs of lions; capitals corinthianized; billet moulds, and acanthus foliage.

As one approaches Spalato from the sea the white stone campanile rises beyond the dark walls of the palace, shadowing Diocletian's ancient water-gate, which now opens on to a modern quay.

The campanile of Trau, with its openings of delicate tracery, its twisted shafts at corners, and bands of interlacing arches, recalls distinctly the Gothic of the Grand Canal.

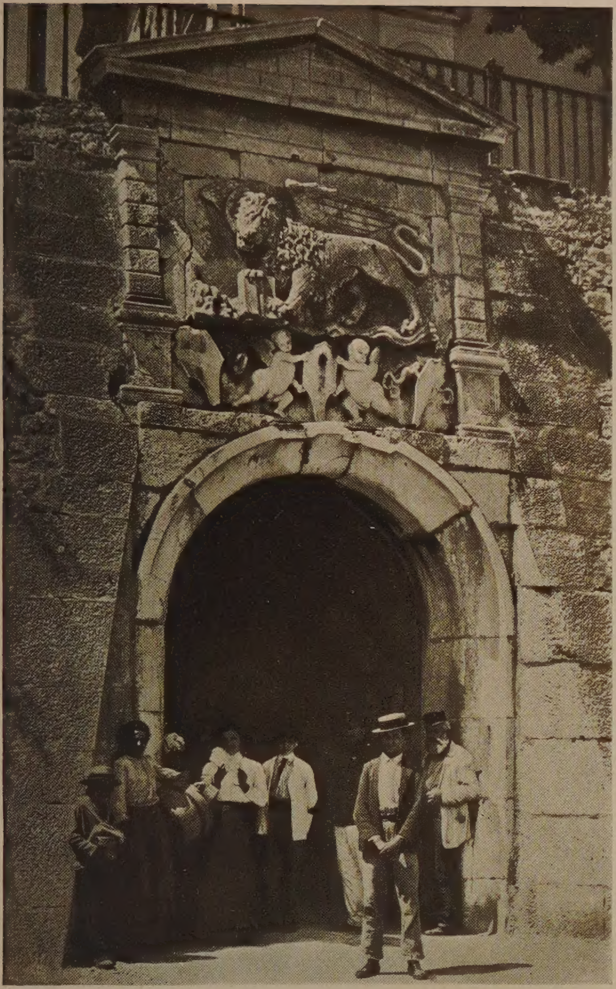
As one sails down the inland passage which leads to Zara, a peninsular city of three water-fronts, he is impressed with numerous campaniles that lift themselves high above the irregular roof lines of the surrounding buildings. The largest of these belongs to the cathedral and was not completed until 1893, when the work was carried out under Jackson, the English architect, whose design reflects carefully the spirit of the Dalmatian tower.

This campanile overlooks the market-place, where perhaps is best seen the contrast of East and West. Here the Latin of European culture, dress, and habits jostles, and bargains over colorful baskets of ripe fruit, with the more humble but picturesque Slav peasant. This cherry-market is famed of Dalmatian visitors. The traveller approaching the Adriatic cities may hear nothing of the old palaces, campaniles, and ramparts, but he is always told of the cherry-market at Zara, the orange-boats of Spalato, and the silver laughter and gay embroidery of the peasants. This hardly accounts for the fact that more architects have not found their way here, and it is curious that every old building and church of Italy has received so much attention, while these equally interesting things across the Adriatic have been almost ignored.

Other towers of Zara suggesting Byzantine or Romanesque art look down on narrow ways, flagged for foot traffic as at Venice. These may lead under windows and pass doorways of the ogee arch and the billet mould of the Venetian palace. Or they may turn the wanderer abruptly into some old ninth century church like that of San Donato, which, of rough masonry construction, bears resemblance to San Vitale at Ravenna and is full of the vitality and promise of the age. Another of these narrow thoroughfares leads to the basilica church of San Grisogono. This edifice with its delicate colonnades is as beautiful as the churches of Lombardy, and would seem too purely Romanesque for the fifteenth century were it in any place but Dalmatia, where architects have built according to taste rather than according to date.

The convent of Santa Maria at Zara boasts the most ancient campanile in Dalmatia, as it was built by King Colman of Hungary to commemorate his triumphal entry into the city in 1195. It is a fine example of the Romanesque tower which originated in Italy and was later carried into Germany by way of Verona and Cologne. Group windows, which increase in number as the tower rises, are set in shallow panels between pilasters. Shafts are placed at the middle of the wall, and imposts extend to the wall faces to catch the width of superimposed masonry; a custom that continued in Dalmatia until the seventeenth century.

The Franciscan monastery also at Zara was founded by St. Francis himself in 1212, and the church was dedicated in 1282. In spite of attempts to modernize it—fortunately rare in Dalmatia—it still retains interesting features. Its small



Porta Marina, Zara.

campanile and garden make one of the most delightful vistas in Zara.

The religious orders have always occupied a more or less important place in the eastern Adriatic. Many of the churches and accessory buildings were erected by them and are still retained by the monks and nuns, so that the visitor has the pleasure of finding these buildings with their ancient atmosphere and in their original settings, and is happily spared the sorrow occasioned by the empty room and the historical account by the caretaker of the ejection of the religious order.

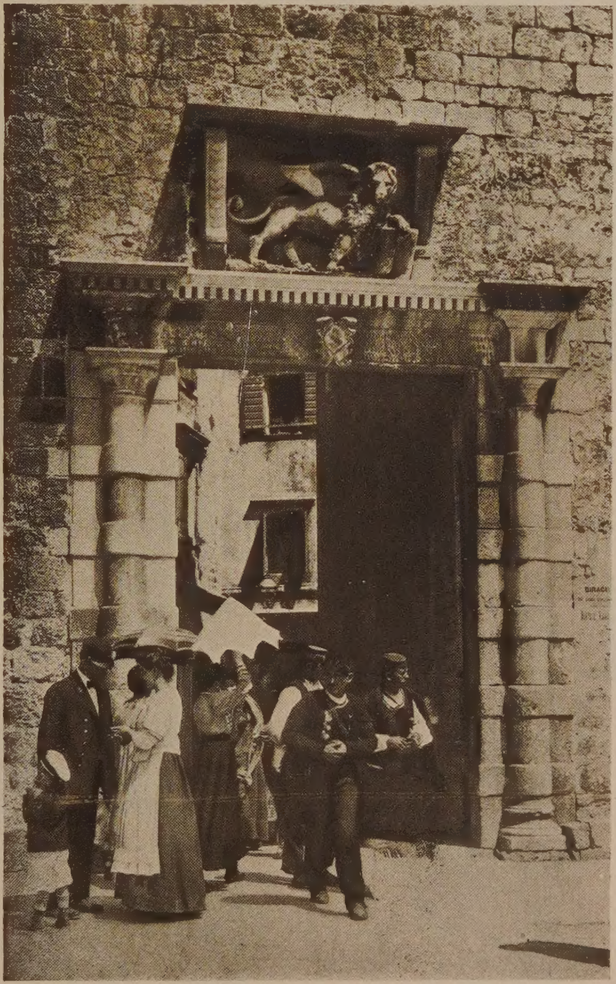
There are various romantic traditions connected with these buildings of Dalmatia. One of the most interesting of them is the story of the founding of the monastery of Lacroma, which is half hidden amid the forests of a lovely island near Ragusa. When Richard Cœur de Lion was returning from the Crusades in 1192, one of the sudden storms arose which are so dangerous in the Adriatic, and Richard's heavily laden little ships were wrecked. While the royal swimmer was struggling for his life in the water he vowed that if he should come safely to shore he would found a monastery on the spot where he landed. The result of reaching the beach of Lacroma is the monastery of San Marco. Such pledges must have been a pious habit of Richard's when in danger, for one is reminded that the founding of the abbey of Bonport on the Seine is attributed to a similar experience.

Very little is left of the original structure of San Marco, as it fell into such ruin in the eighteenth century that the monks ceased to use it, and the Hapsburgs rebuilt it for a royal residence. Here the ill-fated Maximilian of Mexico and the equally unfortunate Prince Rudolph once lived.

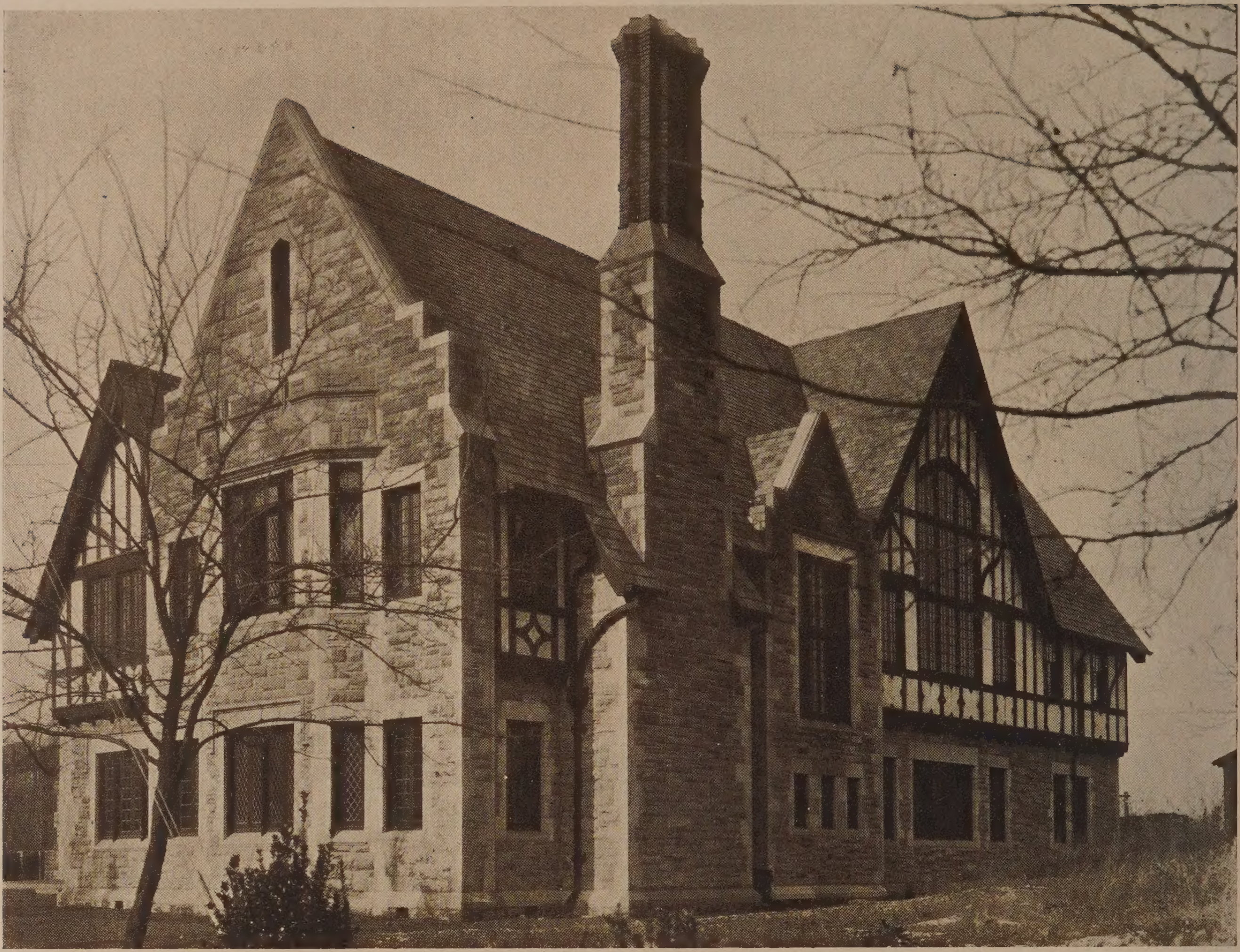
The garden walks are rendered lovely by a profusion of roses, oleanders, myrtles, and aloes. Delightful paths lead through the forest to sheltered nooks and marble seats where a view of the sea awaits one.

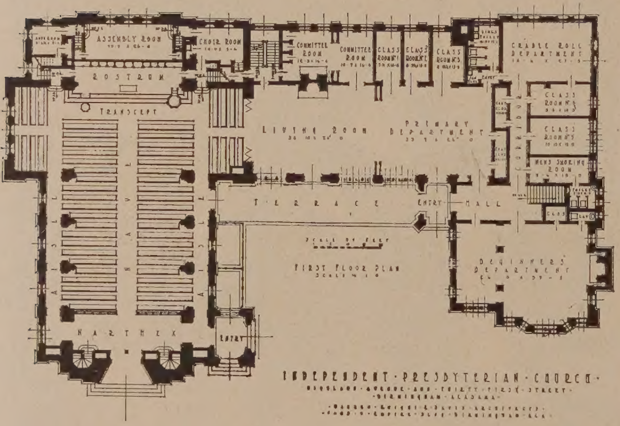
There is a superstition in Ragusa that misfortune overtakes any one who converts this monastery to private use, and circumstances have seemed to foster it. The Emperor Francis Joseph may have been affected by this belief or else he found Lacroma too closely connected with sad memories of its late occupants, for he gave it back to the monks in 1889. But in 1911 the imperial family again acquired it—to brave superstition for only three years.

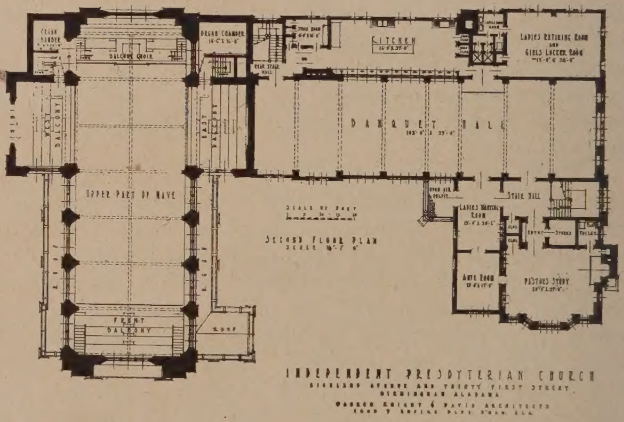
It is now used as a children's sanitarium where little ones are regaining health and strength in the sunny gardens and shady walks. If there linger any spirits of ill omen they are not effective against the childish laughter that echoes through the corridors and fills the old building with merriment.



Gateway at Trau.

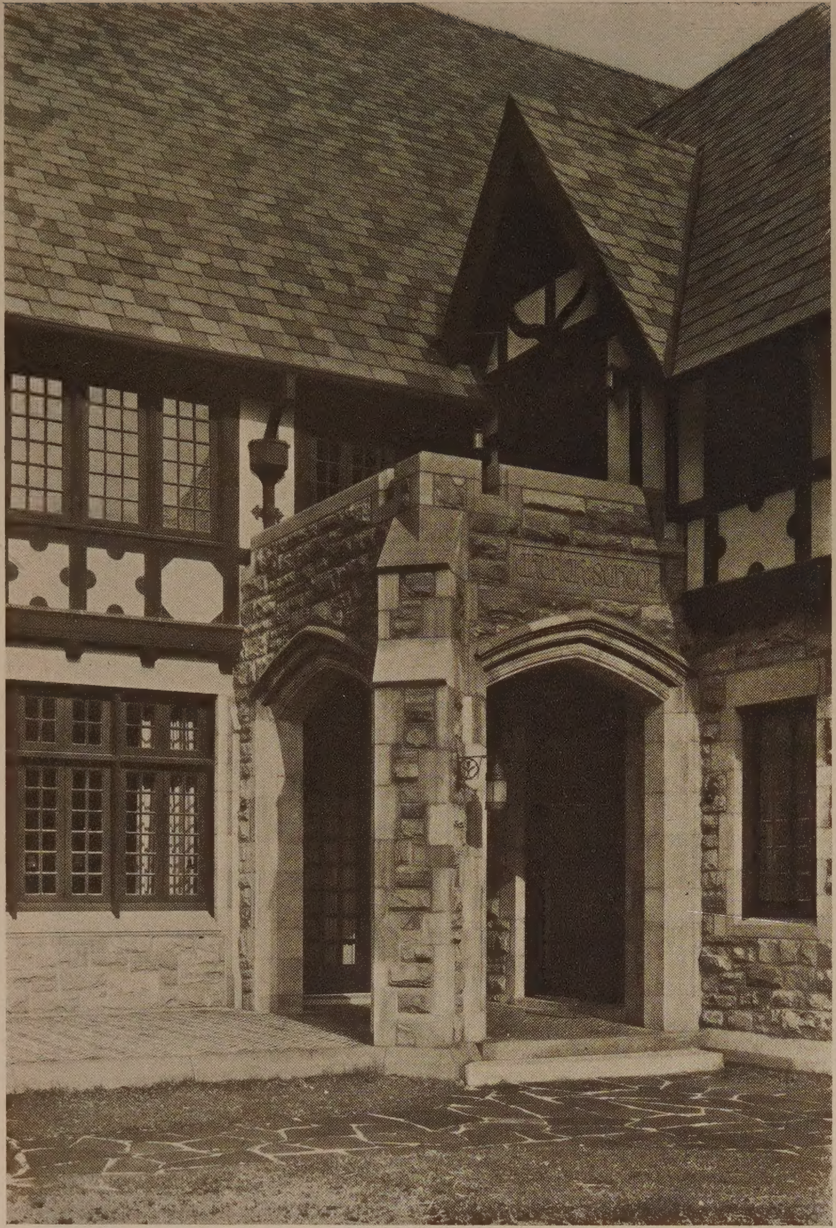




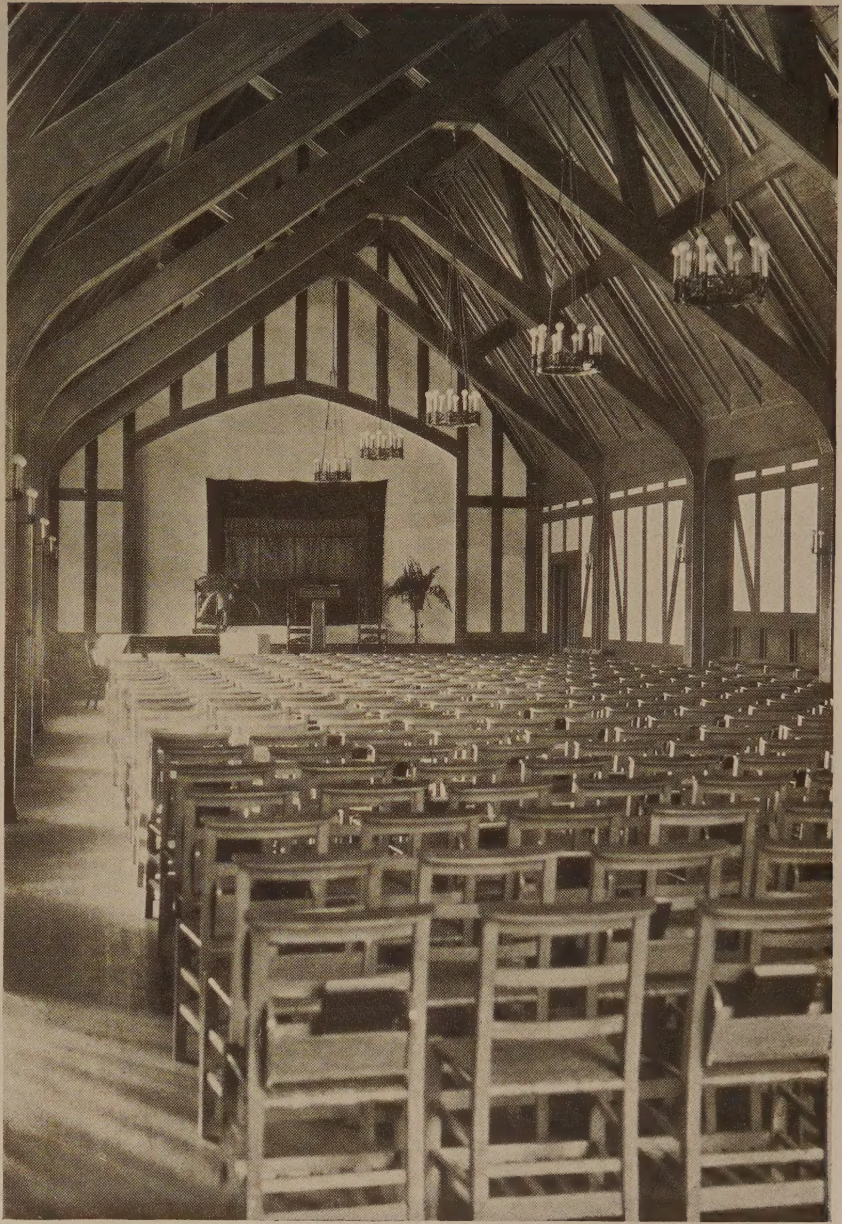


SUNDAY-SCHOOL BUILDING. Warren, Knight & Davis, Architects.

INDEPENDENT PRESBYTERIAN CHURCH, BIRMINGHAM, ALA.



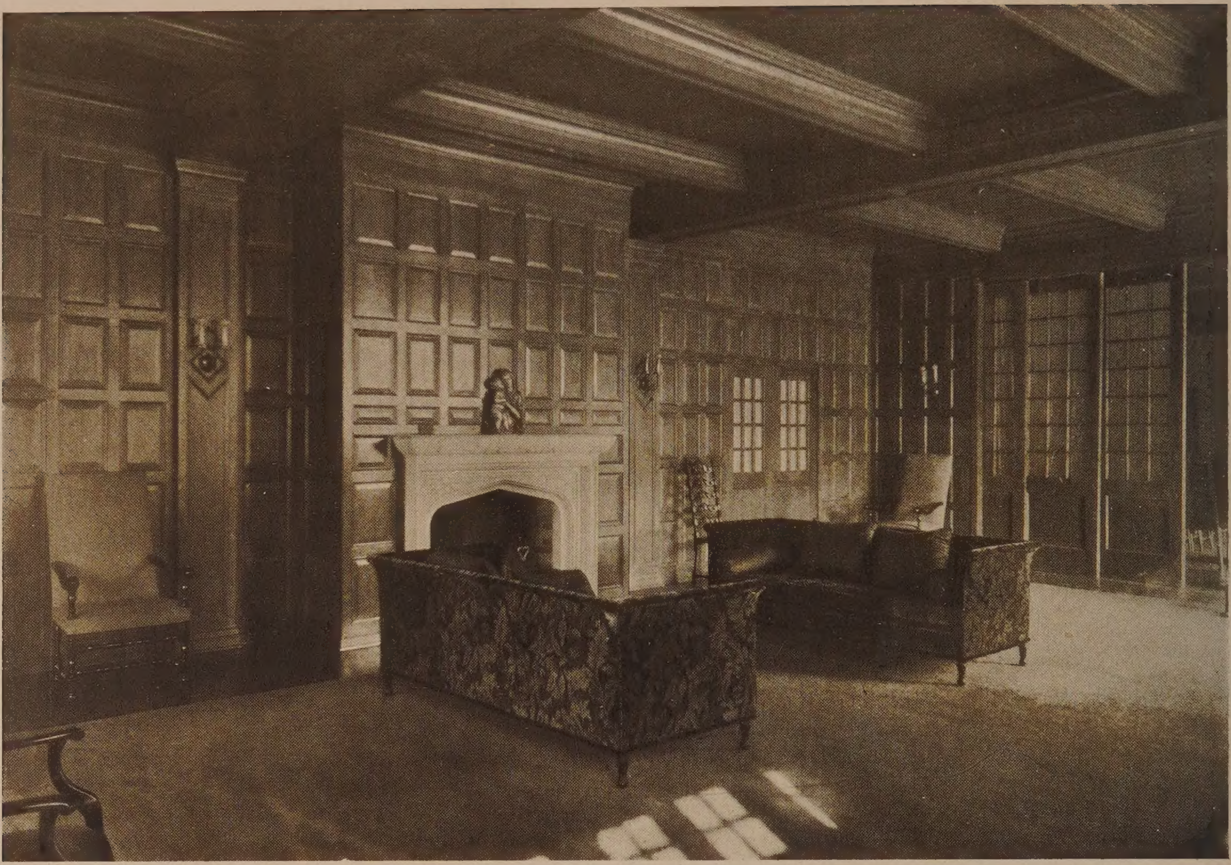
ENTRANCE TO SUNDAY-SCHOOL.



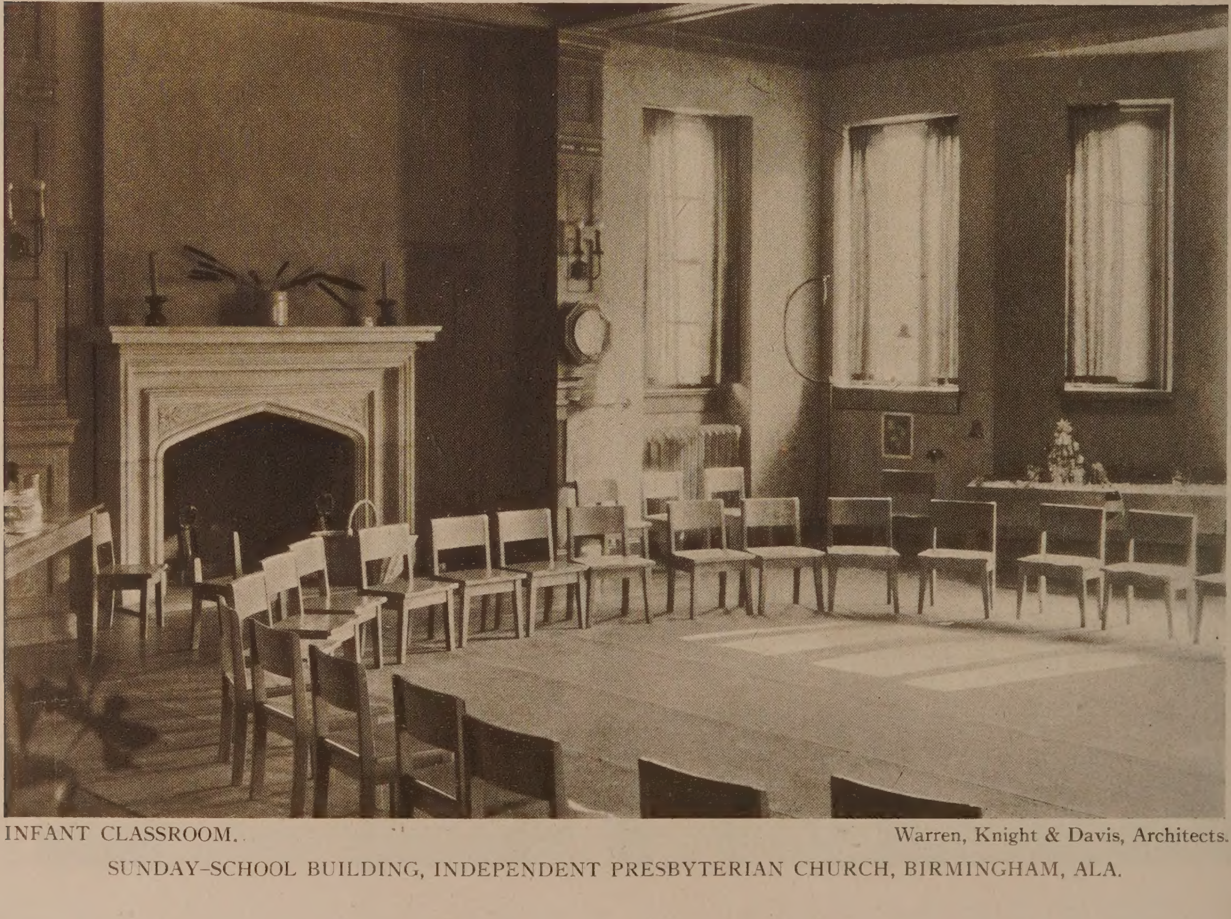
HALL, USED AS CHURCH.

Warren, Knight & Davis, Architects.

SUNDAY-SCHOOL BUILDING, INDEPENDENT PRESBYTERIAN CHURCH, BIRMINGHAM, ALA.



LIVING-ROOM.



INFANT CLASSROOM. Warren, Knight & Davis, Architects.

SUNDAY-SCHOOL BUILDING, INDEPENDENT PRESBYTERIAN CHURCH, BIRMINGHAM, ALA.

The Chicago Temple

Holabird & Roche, Architects

ALMOST ninety years ago the Methodist Church bought property on the corner of Clark and Washington Streets in what was then the village of Chicago. The building was of logs and had been moved across the river on scows from its former location at North Water and Clark Streets. Since that time the property values have risen beyond belief. Other churches have sold their loop sites and moved to less populous districts, but the trustees have steadfastly refused to abandon a location which seemed to them a logical place for a house of worship.

So it is that the growth of the church has kept pace with the growth of the city. From 1831, when the Reverend Stephen R. Beggs organized the first Methodist church and with his ten members held services in a log house near Canal Street and Wolf's Point, there has been continuous expansion.

The Chicago Temple Building is the embodiment of a new thought in modern church architecture, a combination office and church building. It is an ideal situation so far as business interests are concerned. The lot purchased back in the "thirties" is now one of the most valuable corners in the city, convenient to the financial, shopping, and business districts and splendidly situated with reference to transportation facilities. The trustees maintain also that it is an ideal situation for a church building. It stands as an expression of the idea that religion is not merely a Sunday matter, but rather an integral part of every-day life. It is a reminder to the big interests and to the hosts of labor that the church is amongst them, a factor to be recognized in all their struggles. To the visitors, as well as to the residents of the city, the Temple will prove a source of inspiration. Many of the thousands who come to Chicago every day would like to attend devotional services, and though, for various reasons, they may hesitate to go to the outlying districts, they will welcome a shrine which is within easy walking distance from their hotel, their business interests.

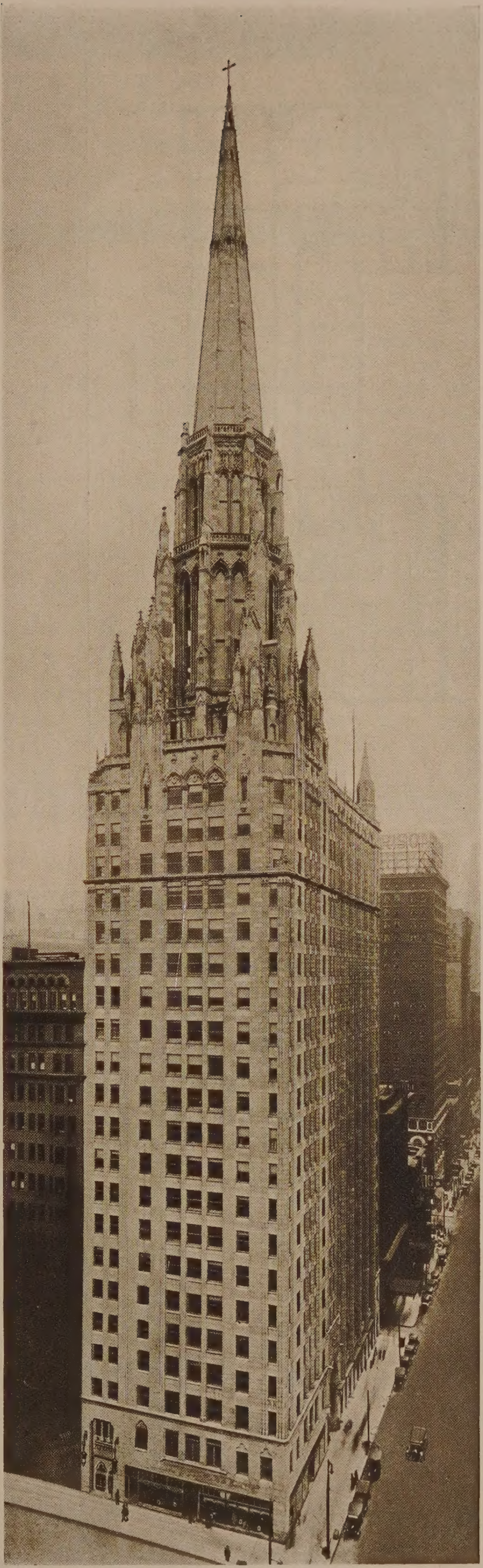
In these days religion, like everything else, must keep in close contact with the people. The idea, therefore, of a church building in the loop, devoted to church work yet self-supporting, is one which has commanded attention throughout the United States. From the point of view of both architecture and economy, it was a difficult problem to erect a building, of the necessary height and at reasonable cost, which would compete favorably with other commercial buildings so far as rentals were concerned.

Architecturally the problem was a difficult one. To design a building which should express both the ecclesiastical and the commercial character of its occupancy required much thought and a careful handling of materials. It was, of course, necessary for practical reasons to make the two functions independent of one another. Because of this, two separate entrance halls and lobbies have been planned. The entrance on Washington Street, an important city thoroughfare, leads into the lobby of the building with its eight elevators, while the Clark Street entrance leads into the handsome church foyer. Stores occupy all the street frontage, but the remainder of the space on the ground floor is devoted to the magnificent auditorium.

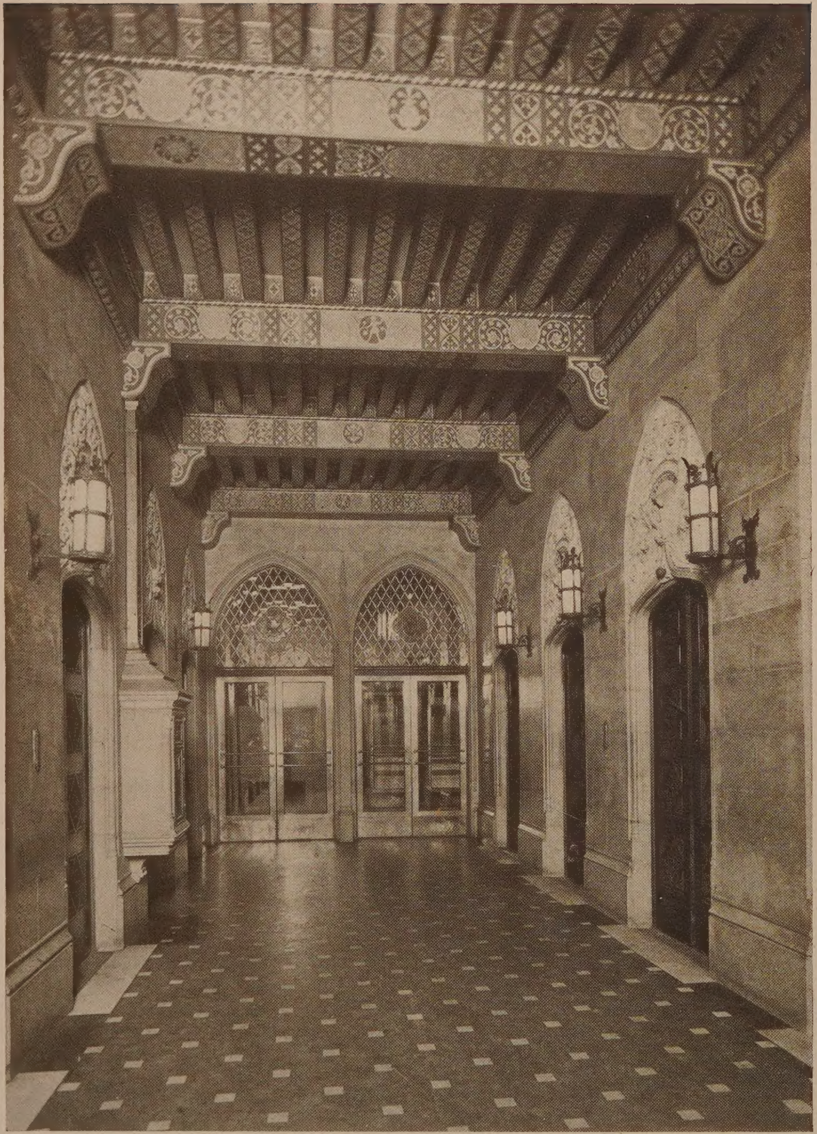
A large recreation room with a spectators' gallery is located in the basement and the rest of the building from the third floor to the twenty-first is devoted to offices.

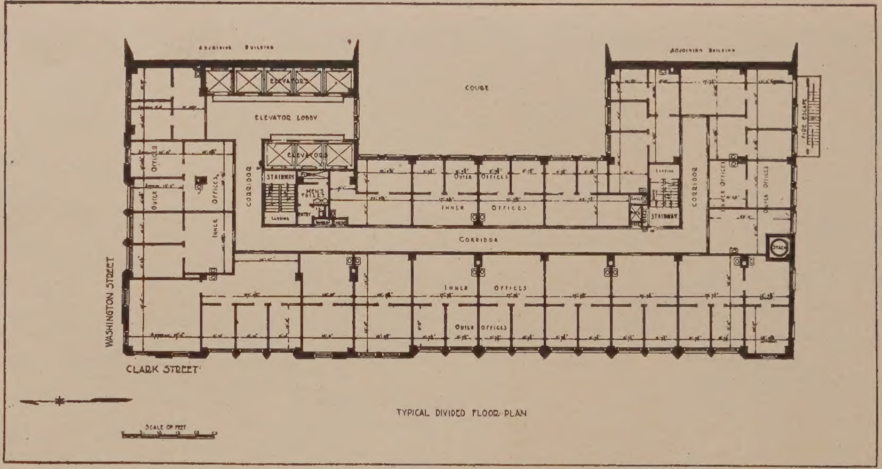
This commercial aspect has been taken into consideration in designing the exterior. The edifice rises straight from the sidewalk to the roof, twenty-one stories overhead, and thence continues step by step up the tower structure and the

(*Continued on page* 391)

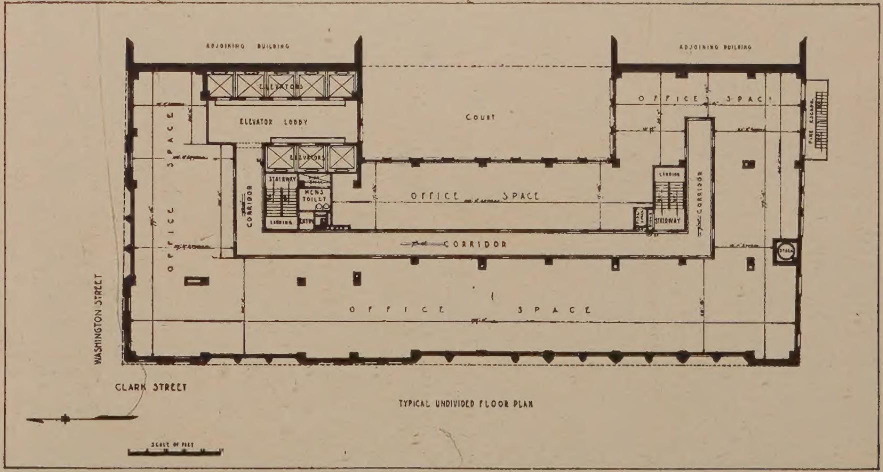


Chicago Temple Building, Chicago, Ills





TYPICAL DIVIDED FLOOR PLAN



TYPICAL UNDIVIDED FLOOR PLAN

The design of the Washington Street entrance vestibule and public elevator lobby is in sympathy with the ecclesiastical character of the building, without sacrifice of its practical utility. The floors are a combination of Batesville and Belgian Black marbles. The walls, arcaded and highly ornamental, are of Batesville marble, and the elevator doors, frames, etc., are of antique bronze. Here, too, the ceilings are richly decorated. Throughout the remainder of the building the elevator lobbies have tutti-colori walls and base, with marble floor and a wood cornice. The corridors are wainscoted to the height of the doors with white marble.

ELEVATOR-LOBBY TO OFFICES, CHICAGO TEMPLE BUILDING, CHICAGO, ILLS.

Holabird & Roche, Architects.

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Editorial and Other Comment

Conditions

ABOUT this time of year we are apt to hear of a slump in building conditions and of the approach of an unusually hard and long winter. Up in New England the black alder bushes are covered with their brilliant scarlet fruit, a richer harvest than usual, and the natives say it is a sign of a hard winter. And from city and suburbs the squirrels are reported as being very busy laying in winter supplies. But all signs fail and as far as the building situation goes the conditions seem to point to but a slightly diminished activity. There is one aspect of the case that is increasingly hopeful, the more general tendency to carry on in spite of cold weather.

Even with the inevitable uncertainty of a Presidential election before us, there appears a spirit of optimism. The Department of Commerce recently issued a statement showing that contracts let in thirty-six states in July, 1924, exceeded those of a year ago. There has been some reduction in the cost of construction, but this is immaterial and is not taken seriously when new work is projected.

Residential building has made tremendous progress. Wherever you go you see new houses going up. The people of the cities are being driven out by the high rents and the lack of small apartments. Predictions have been made of a possible serious economic disturbance owing to the overproduction of immense speculative apartment houses. Statistics in New York City certainly show a great many vacancies, and as an indication of a surplusage some owners have offered a month's rent free—this looks like old times but it is only a gesture, rentals are and will probably stay at rates that "Old Timer" would have considered, in his day, exorbitant, to put it mildly. If many people are moving to the suburbs, thousands are coming into the cities, where high wages and opportunities for work seem greater, and the result is an unwholesome congestion in the living conditions for wage earners.

An interesting phase of the building situation is the apparent ease with which loans can be raised for new buildings devoted to business. There seems to be no limit to the expense of providing buildings for offices, or lofts for manufacturing and merchandising. It will be hard to put any serious brake on the impetus of the past few years. Old and out-of-date office buildings are being torn down to make way for new and more adequately equipped ones, and the aspect of many of the business centres of our cities is changing for the better. Long established residential districts are being given over to business. The once retired and exclusive Madison Avenue in New York promises to go the way of its more famous neighbor, Fifth Avenue. The high building of commerce has invaded its pristine aloofness and a few years will see it given wholly over to buying and selling. All the great cities are going through the same process of reconstruction, and the building situation is going to continue along prosperous ways, for the demand seems ever to keep ahead of supply.

"Construction is the balance-wheel of American industry," says Secretary of Commerce Hoover in a foreword to the recently issued report on "Seasonal Operation in the Construction Industries," made by a committee of the President's Conference on Unemployment. "The ebb and flow in the demand for construction, seasonally and between different years, to a large degree affect our economic stability."

Then, summarizing the findings and recommendations of the committee, he states:

"Bad weather is not the principal cause of seasonal idleness. Customs which became fixed when builders had not yet learned how to cope with adverse weather conditions have not been changed to meet improvements in building materials, the development of new equipment, and innovations in management methods. For most types of construction it now is possible to build the year round in all parts of the United States."

Secretary Hoover and the committee charge materials manufacturers and dealers, as well as all other elements in the building situation, with the responsibility of educating potential builders to the fact that they *can* advantageously build in cold weather and as to *how* they can do so.

Architects as "Artists and Philosophers"

ARCHITECTURAL education is veering from tradition, stressing less both beauty and taste, according to Professor William A. Boring, director of the School of Architecture of Columbia University, who, in a special report to President Nicholas Murray Butler just made public, records his impressions of the International Congress on Architectural Education which recently closed its sessions in London.

American architects, Professor Boring declares, are both artists and philosophers, comparable in their cultural associations to those of Greece and Rome. Planning he calls the basis of architecture, saying that training demands sound knowledge of construction.

"The key note of nearly all discussion impressed one as insistence on expression of modern ideas of physical needs of society, and of modern methods of construction," says the report of Professor Boring, who is Treasurer of the American Academy in Rome.

"Insistence was recorded on expressing modernity. The need of beauty was not stressed, nor was the cultivation of taste made an issue. This is, no doubt, a healthy sign. The feeling that we are leaning too much on the use of good old forms which have been overworked augurs something vital, but this idea alone cannot lead us to success in architectural design.

"Knowledge of structural materials and their uses, excellent craftsmanship, even good detail, are not the broad basis of good design. To place these in the forefront of an educational scheme seems narrowing. The disposing of masses after analysis of the problem is more important. Planning in its broadest sense is the basis of architecture.

"This attitude of mind must be encouraged in our educational work. We must adhere to the larger aspect of design in instruction, including, of course, as a proper equipment, a sound knowledge of construction and good craftsmanship.

"At the risk of seeming narrow, I must say that the American exhibit seemed to me a sound expression of good design, when compared with the work of other countries.

"The teaching of architecture as an art in a well organized school seems to raise it into a higher plane than the combined efforts of the office and school working together, as followed by many schools.

"The time we have to instruct pupils is too valuable to devote to petty details of the business of an office. It seems better to inspire students to work for an ideal of beauty than to equip them to take positions as technical assistants in an office.

"Architecture as a profession should rank in the mind of the public as on a par at least with law and medicine. We cannot maintain it so by teaching the craft alone. We must turn out scholars who are masters of craft also. In America our architects of distinction move in the highest intellectual circles, as they did in Greek times. They are men of culture, of science, of good taste, and have a knowledge of building processes as well as of good design. In other words they are artists and philosophers.

"Much has been said about commencing early to learn architecture, and no doubt early familiarity with good buildings is an advantage. Our experience, however, shows that college-bred men who come rather late to the study of architecture are the strongest men in our school. Learning to draw early is almost essential, and facility in this method of expression is a great advantage. Some have it naturally; others must acquire it; all must master it.

"But the art of architecture is greater than its expression on paper. Only a limited number of aspirants reach the plane of real architects. Schools should teach such subjects and in such a way as to bring out and develop the natural gift of the student.

"We must recognize that a person of great talent will succeed either in or out of a school, but he will have a better basic foundation for his work if he has good school training. A school should give him those things as basic ideas which he can learn in practice only by going through and rising above the maze of details.

"Four years is not enough time for a high school graduate to reach the proficience represented by our degree. If a curriculum includes general education subjects, it should be longer than four years, because the professional instruction alone requires at least that much time.

"The average student who has not advanced beyond high school grade is not sufficiently developed to approach properly the major subjects taught in a professional school.

"He can very well be taught by allotting six years from high school to diploma, on the plan of a combined course which begins by mixing the elementary subjects in his professional studies with his general college curriculum."

Professional Interior Decorating Courses at New York University

A COMPLETE four-year course in interior decoration, the first to be offered in any university or college in this country, will be inaugurated this fall by the Department of Fine Arts of New York University. This announcement was made by William Sloane Coffin at a luncheon given at the Art-in-Trades Club by Professor Fiske Kimball, head of the university fine arts department, for members of the faculty and the advisory committee.

Professional instruction will be given by persons actively engaged in interior decoration and design, making the work unique from this standpoint as well as for the fact that merchandising as well as design is included in the curriculum. This last qualification is of enormous value to the decorator, according to Professor Kimball, who said that the trade needs ten salesmen to one designer and that heretofore no effort has been made to train people to do anything but design.

The students will have the opportunity of studying at the Metropolitan Museum, the Museum of Decorative Art at Cooper Union, and many of the decorating establishments in this city. With the co-operation of the managers of several large stores the young artists will be allowed to make use of their furniture galleries for the construction and layout of model rooms.

The curriculum will include such collegiate courses as European History, French and English Literature, Economics, Psychology, Law, and Financial subjects, as well as those relating to the decorative arts. William Sloane Coffin, founder of the Arts-in-Trade Club, and Colonel Michael Friedsam, president of the Altman Foundation, are the financial supporters of the new enterprise.

In addition to the four-year course in decoration a special two-year course for designers has been arranged. There has also been prepared a one-year period of work in interior decoration which especially fits the needs of merchants and salesmen who have not the time to devote to extensive study. With the exception of one subject, Furnishing, this latter course can be taken either during the day or in the evening.

Francis Lenygon, Fellow of the Royal Society of Artists, will be in direct charge of the department. He will be assisted by J. L. Northam, a member of the Society of Architects; Professor Rudolf Riefstahl, Miss Jeanette Becker. Lachlan MacLachlan, Frank W. Richardson, and Evan J, Tudor. Special lecturers will include William Sloane Coffin, Miss Marian Hague, T. Atkins Tout, Samuel Yellin, Gustave S. Jacobson, Edward Maag, and Miss Nancy McClelland.

The members of the advisory committee include Richard F. Bach, of the Metropolitan Museum of Art; Frederick Budd, William Sloane Coffin, Colonel Michael Friedsam, S. Kent-Costikyan, Charles R. Richards, of the American Association of Museums; Percy S. Strauss; T. Atkins Tout, president of the Society of Interior Decorators; and Harry Wearne, president of the Art-in-Trades Club.

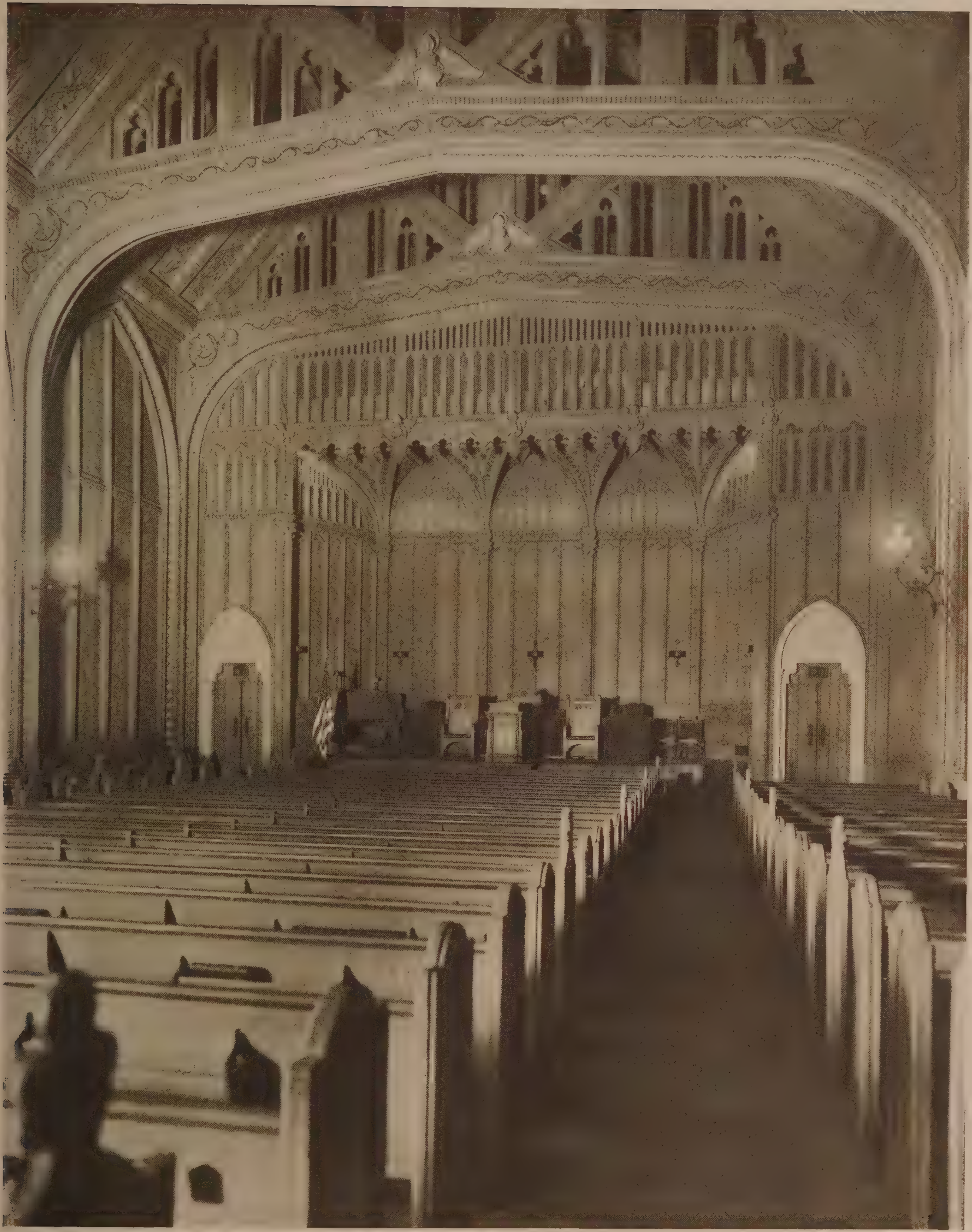
Willis Polk

THE death of Mr. Polk removes one of the most active and progressive of the architects of the Pacific Coast. He was known everywhere for his enthusiasm and fearlessness in good work both in behalf of the profession and the public.

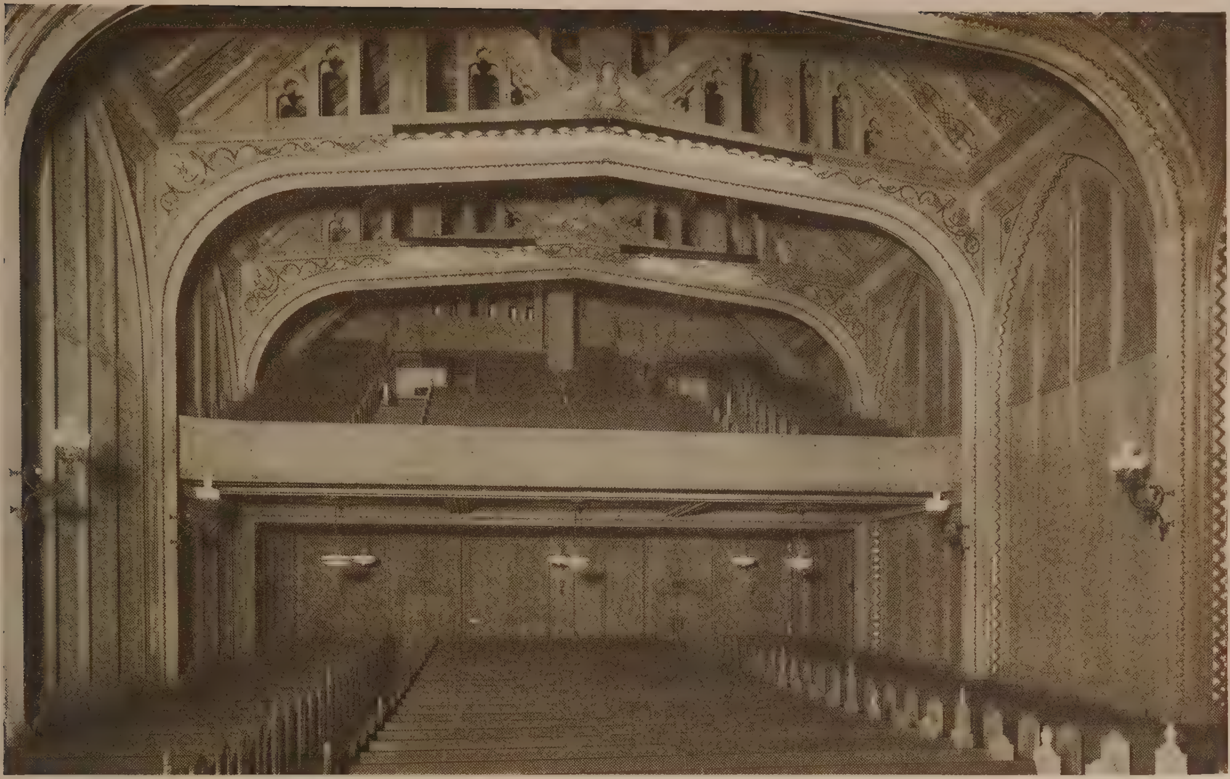
Color

IT took courage, a fine sense of artistic fitness, a certain amount of sheer nerve to design such a building as that Mr. Hood has constructed for the American Radiator Co. facing the open spaces back of the New York Public Library.

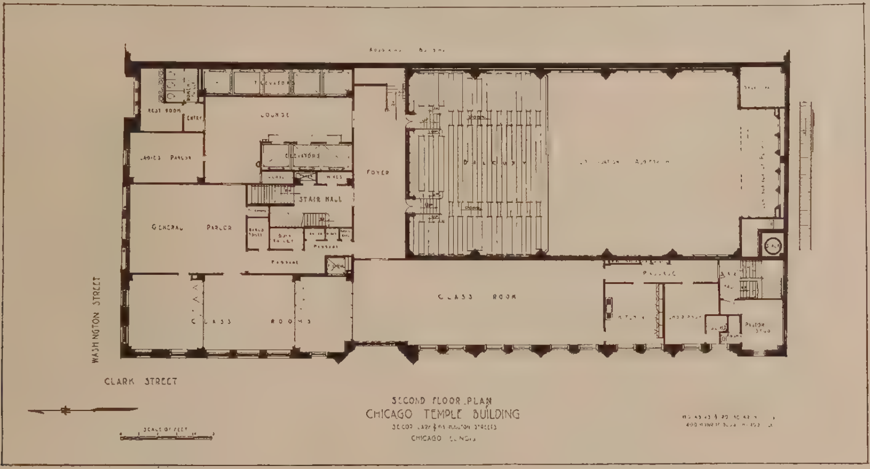
If it had been left entirely black without the inspiring glow of the color atop, it would have attracted notice by its accented lines and towerlike height. It has character and distinction and adds a delightful new note to the architectural environment of the rather severe and subdued gray of the library.

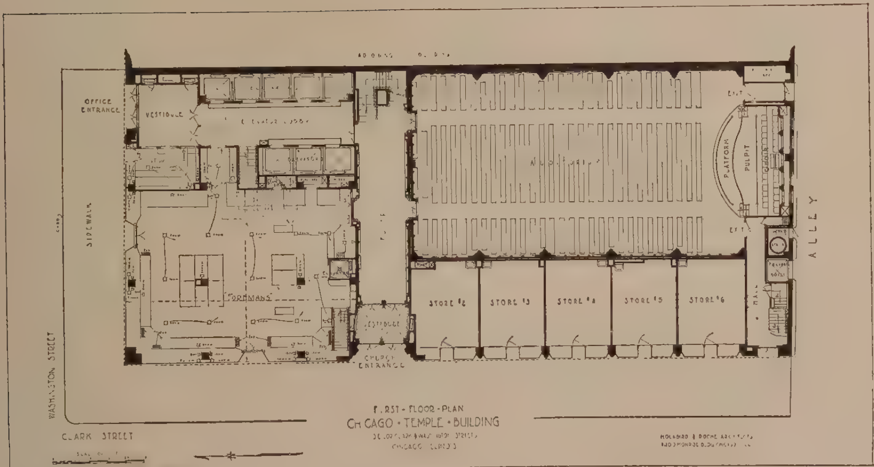


CHICAGO TEMPLE (FIRST METHODIST EPISCOPAL CHURCH), CHICAGO, ILLS. Holabird & Roche, Architects.



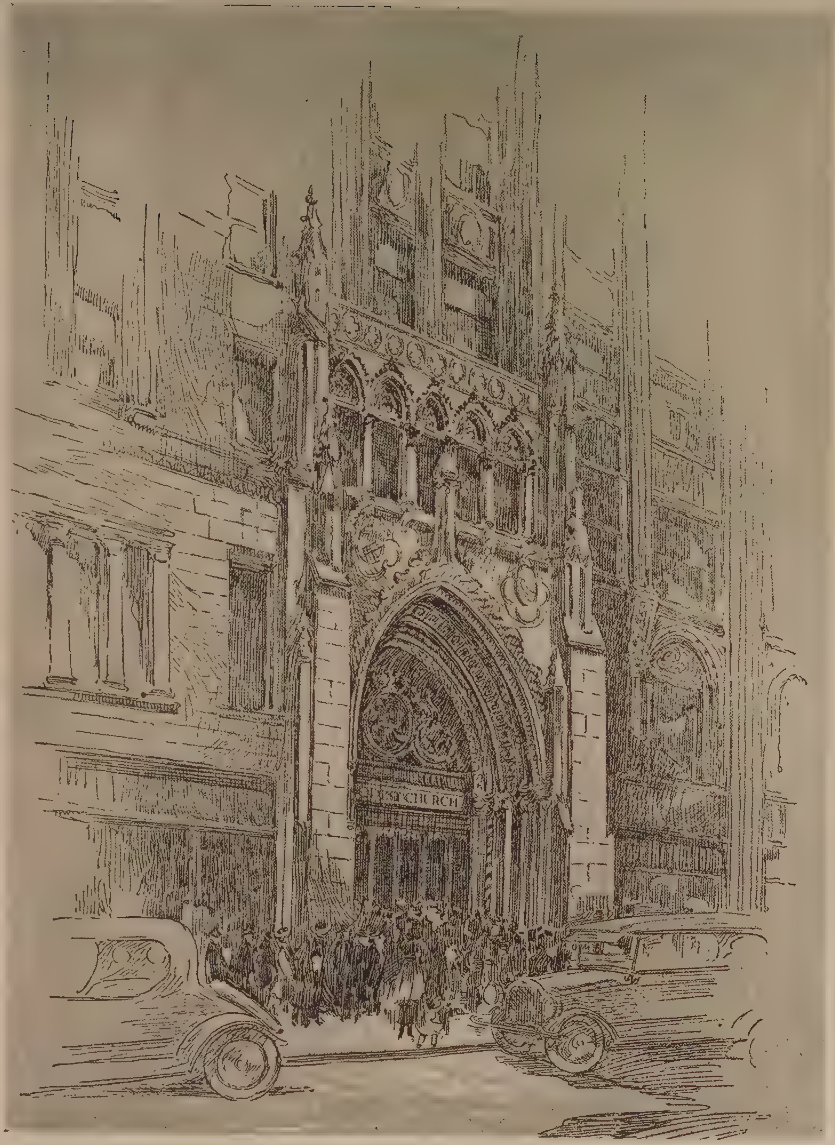
CHURCH AUDITORIUM, TOWARD BALCONY.



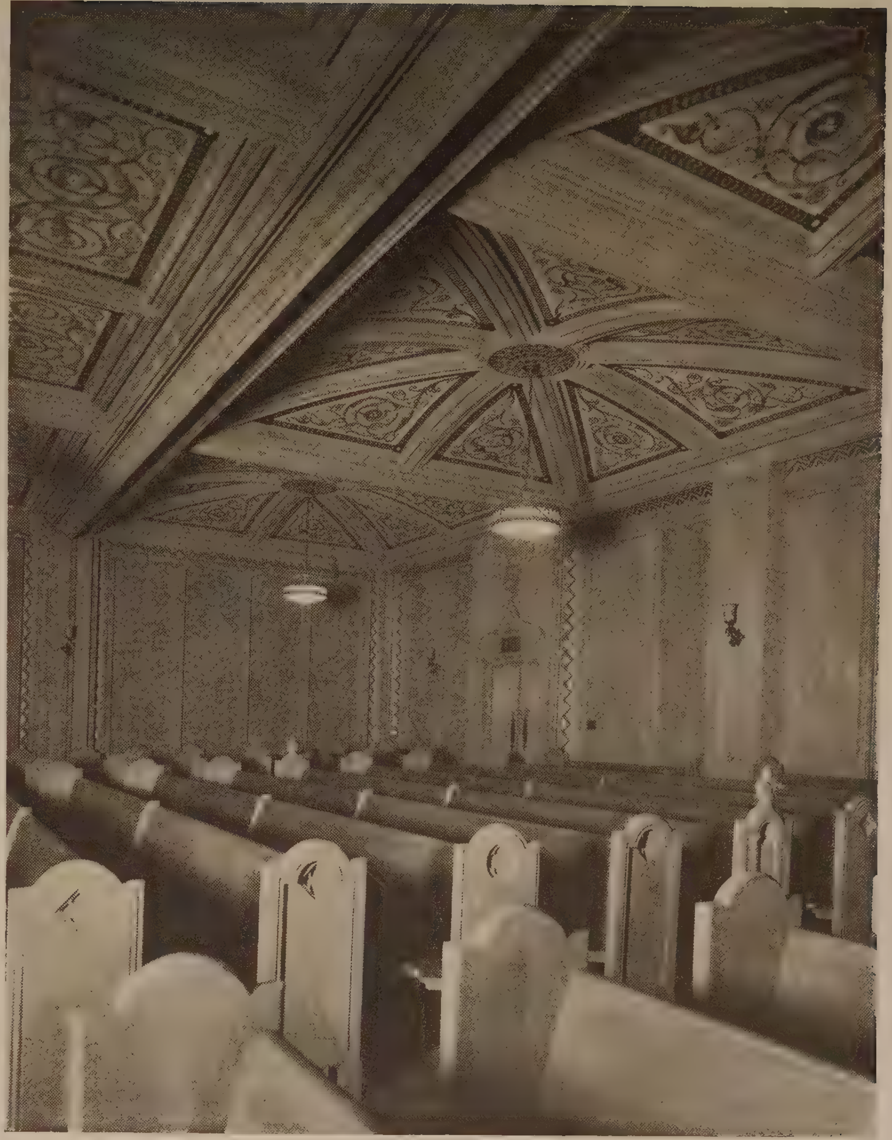


CHICAGO TEMPLE (FIRST METHODIST EPISCOPAL CHURCH), CHICAGO, ILLS.

Holabird & Roche, Architects.



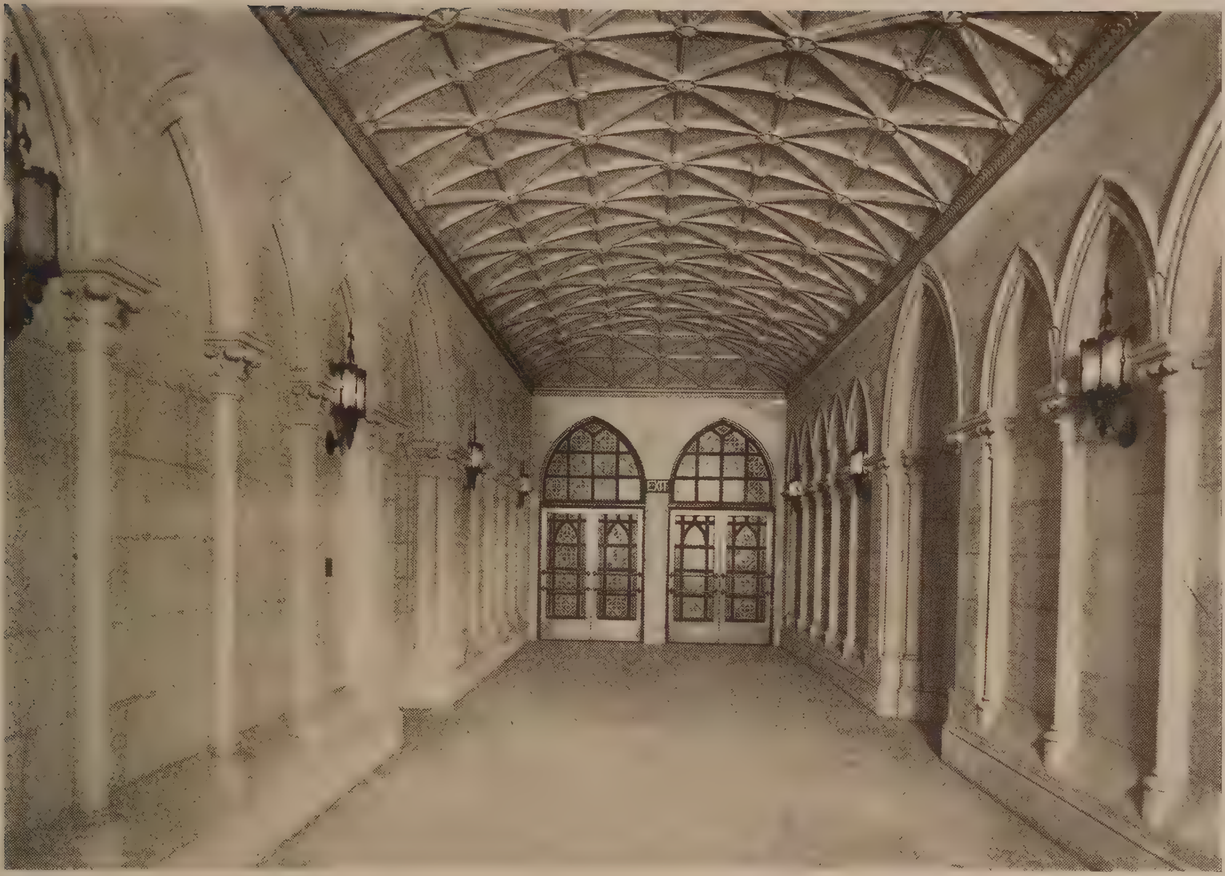
SKETCH FOR ENTRANCE TO CHURCH VESTIBULE AND LOBBY.



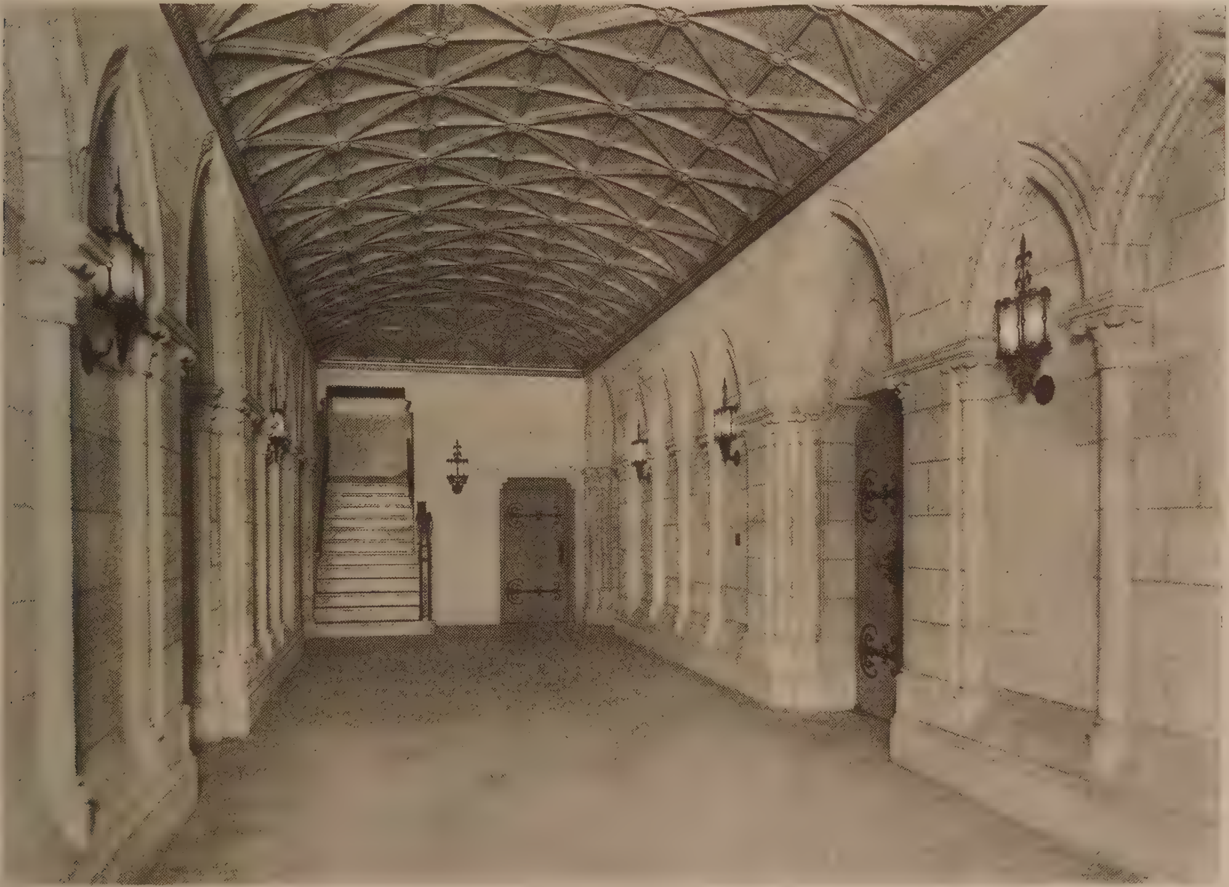
DETAIL OF AUDITORIUM UNDER BALCONY.

Holabird & Roche, Architects.

CHICAGO TEMPLE (FIRST METHODIST EPISCOPAL CHURCH), CHICAGO, ILLS.

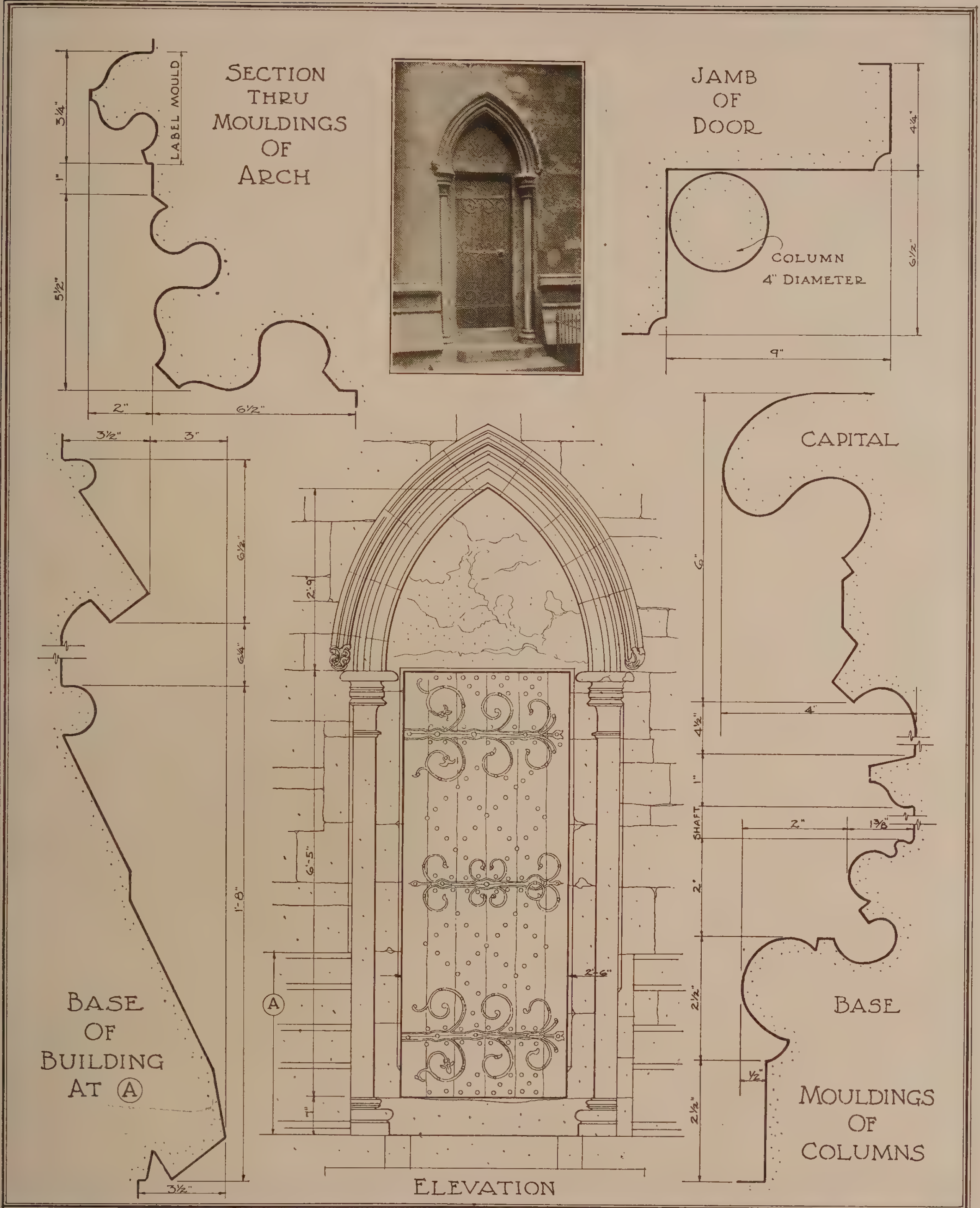


TOWARD STREET ENTRANCE.

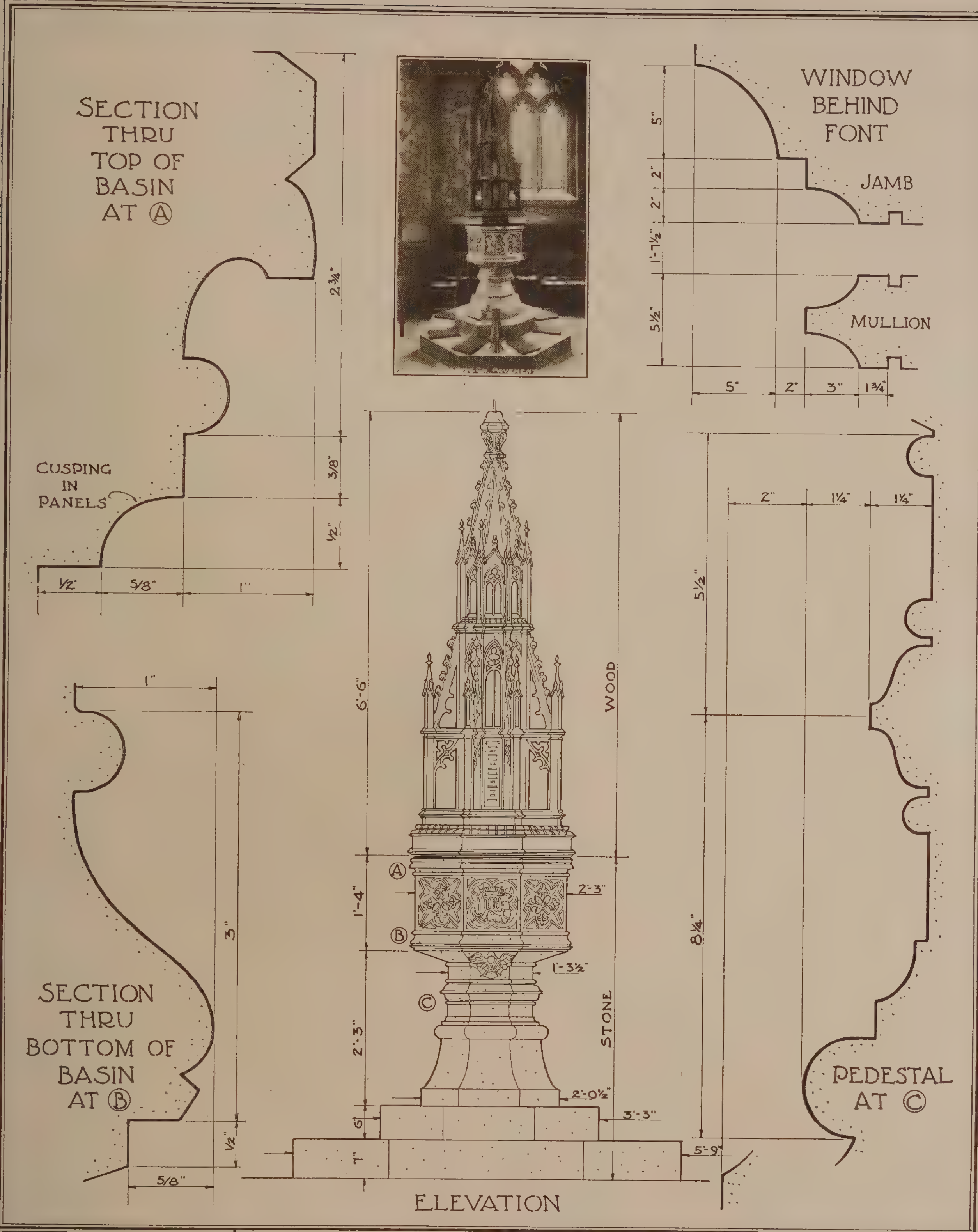


TOWARD STAIRWAY TO SUNDAY-SCHOOL. Holabird & Roche, Architects.

CHURCH LOBBY, CHICAGO TEMPLE (FIRST METHODIST EPISCOPAL CHURCH), CHICAGO, ILLS.



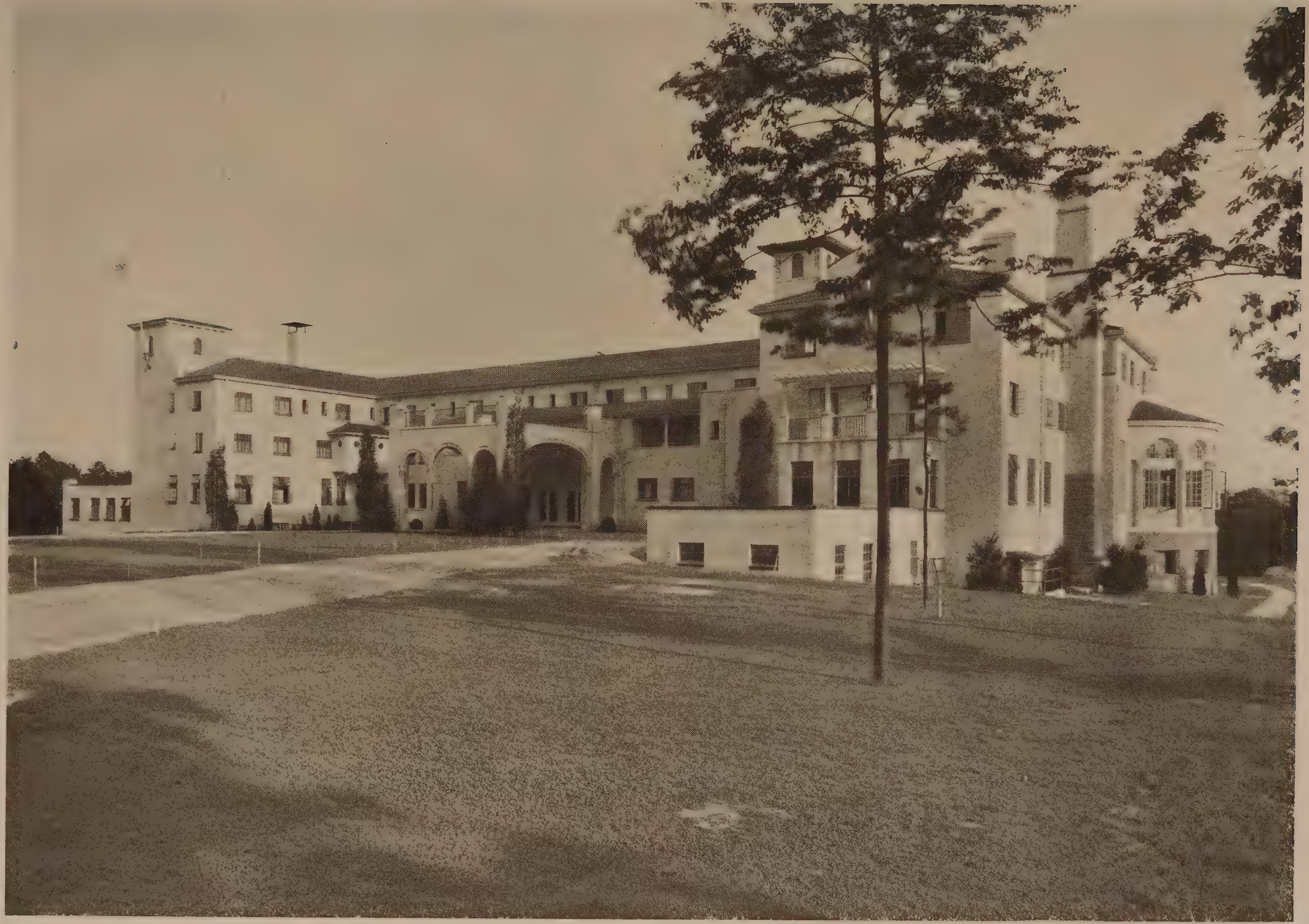
ARCHITECTURAL DETAILS ENGLISH NO· SERIES ①	· LINCOLN · CATHEDRAL CHAPTER HOUSE EXTERIOR DOOR	MEASURED AND DRAWN · BY · E· PICKERING



ARCHITECTURAL DETAILS ENGLISH
NO· SERIES ②

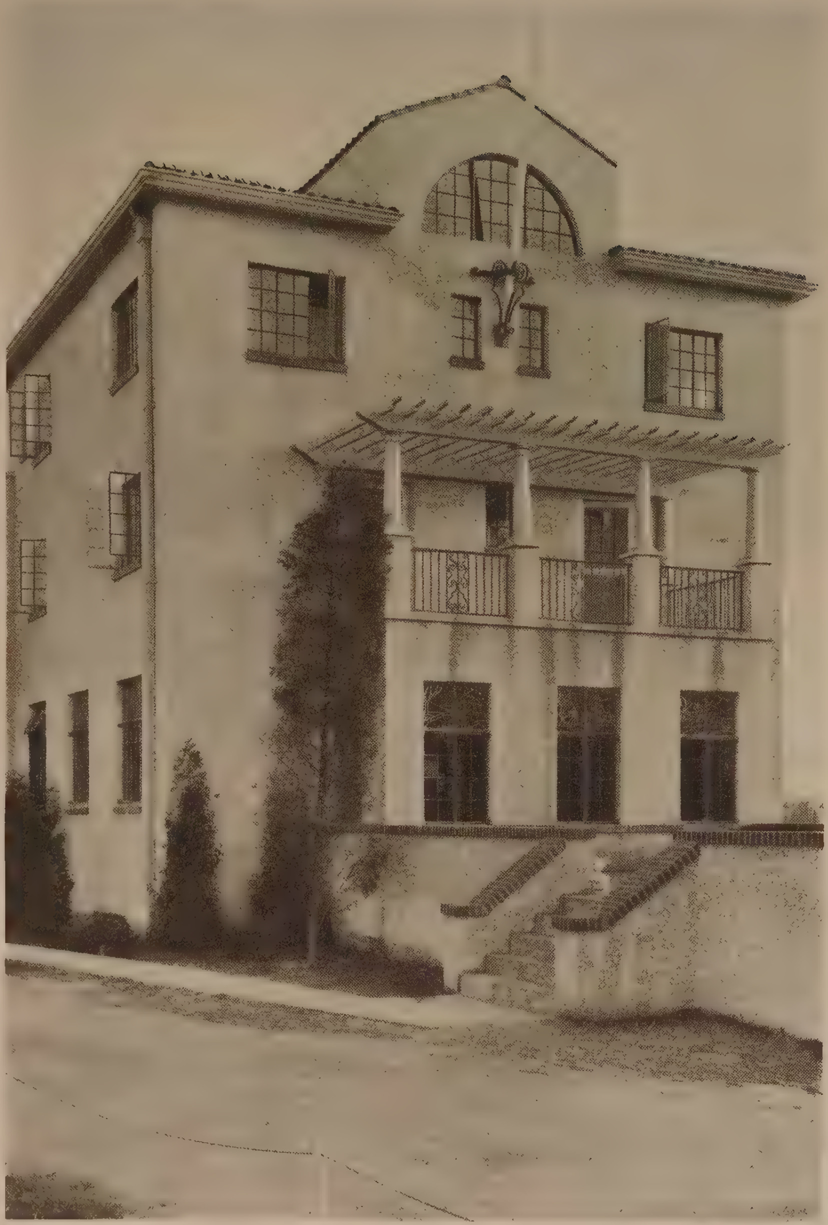
·YORK·
ALL SAINTS CHURCH·PAVEMENT
BAPTISMAL FONT

MEASURED AND DRAWN
◇ BY ◇
E·PICKERING·

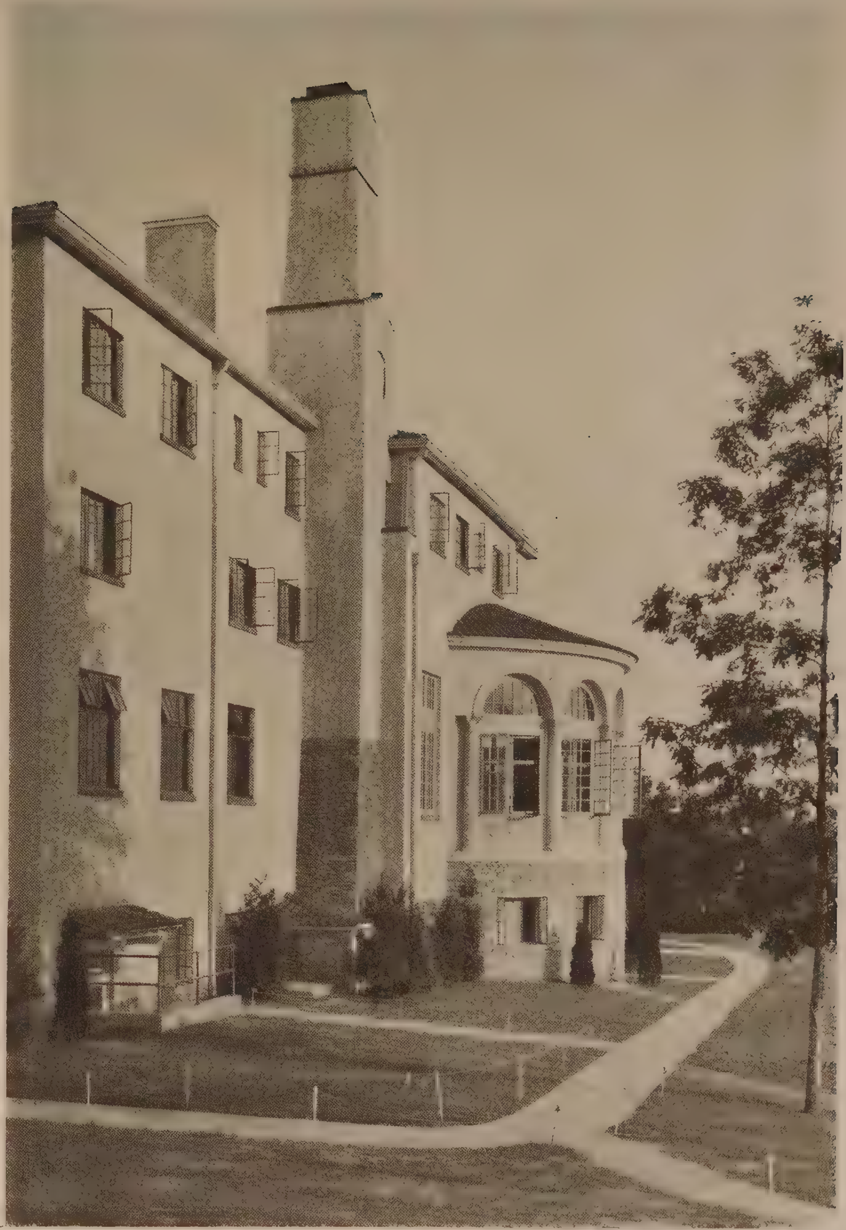


NORTHWEST SIDE, CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.

Philip M. Julien, Architect.



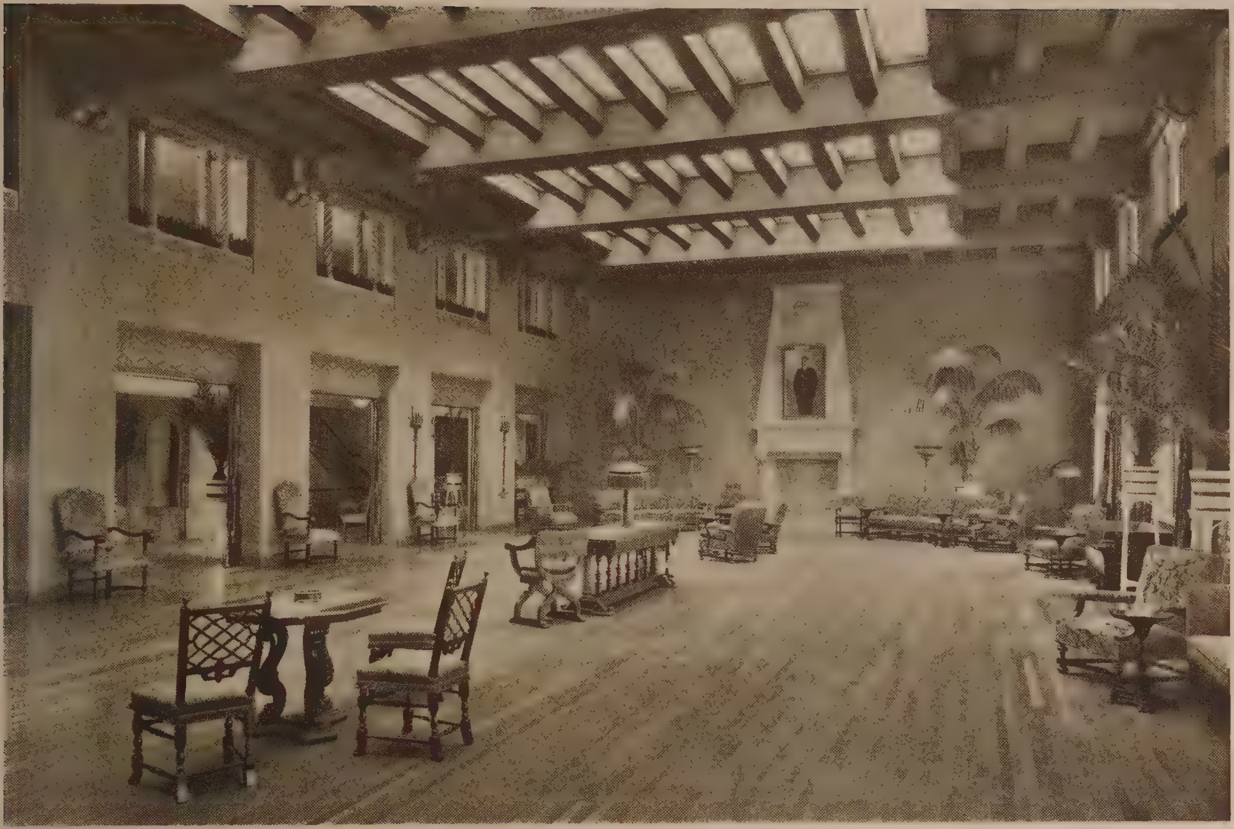
DETAIL OF WING.



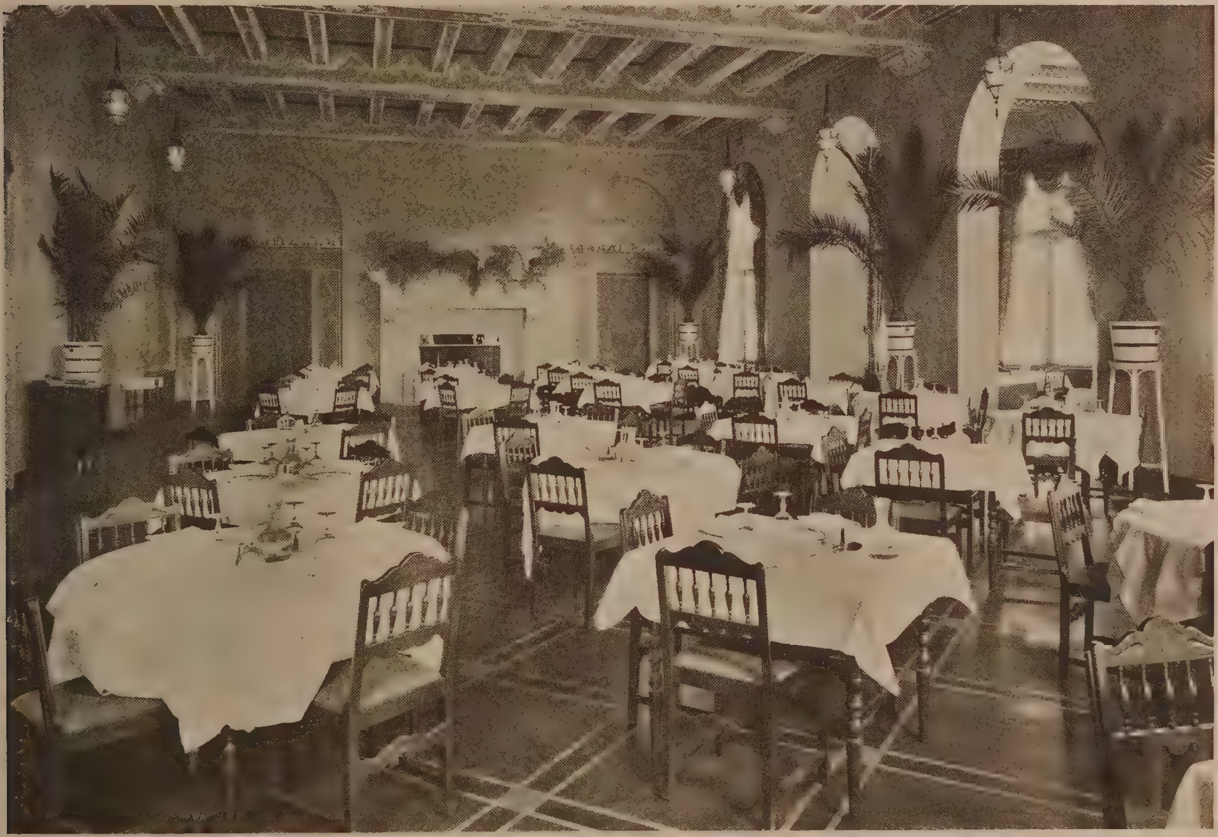
DETAIL, WEST SIDE.

Philip M. Julien, Architect.

CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.



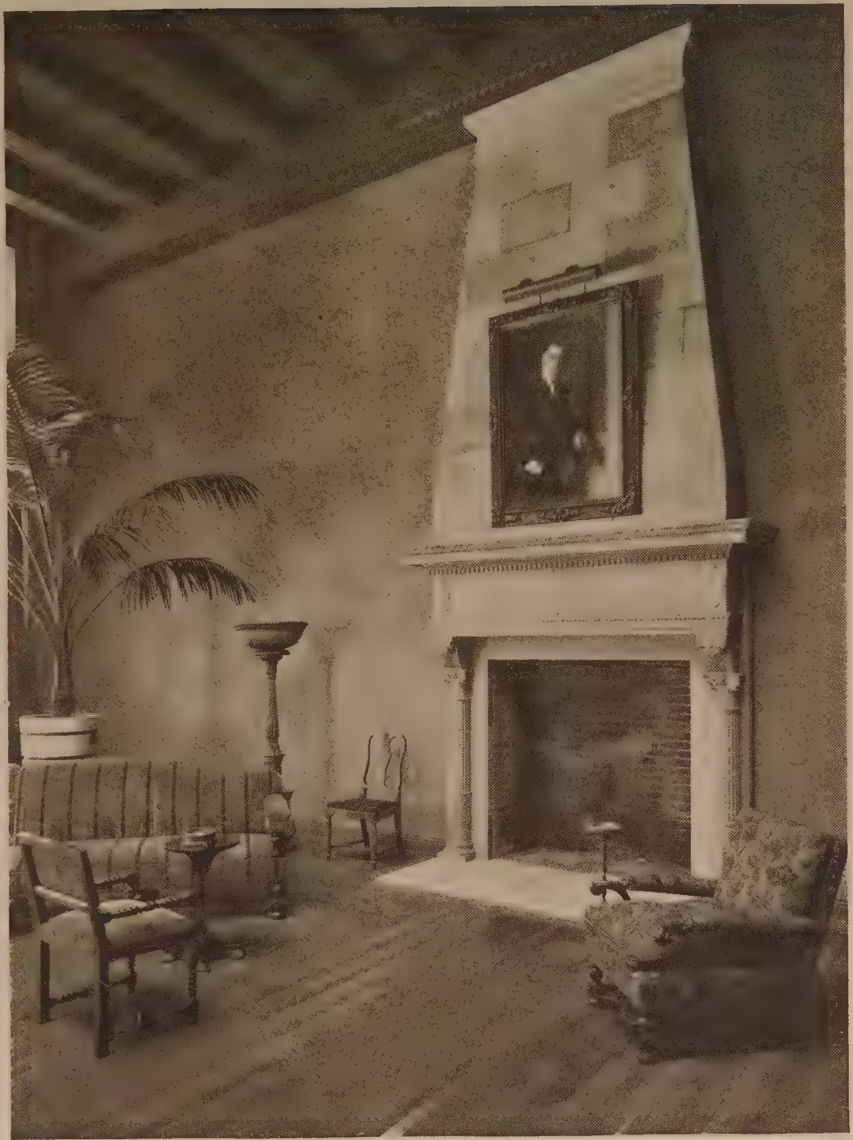
LOUNGE.



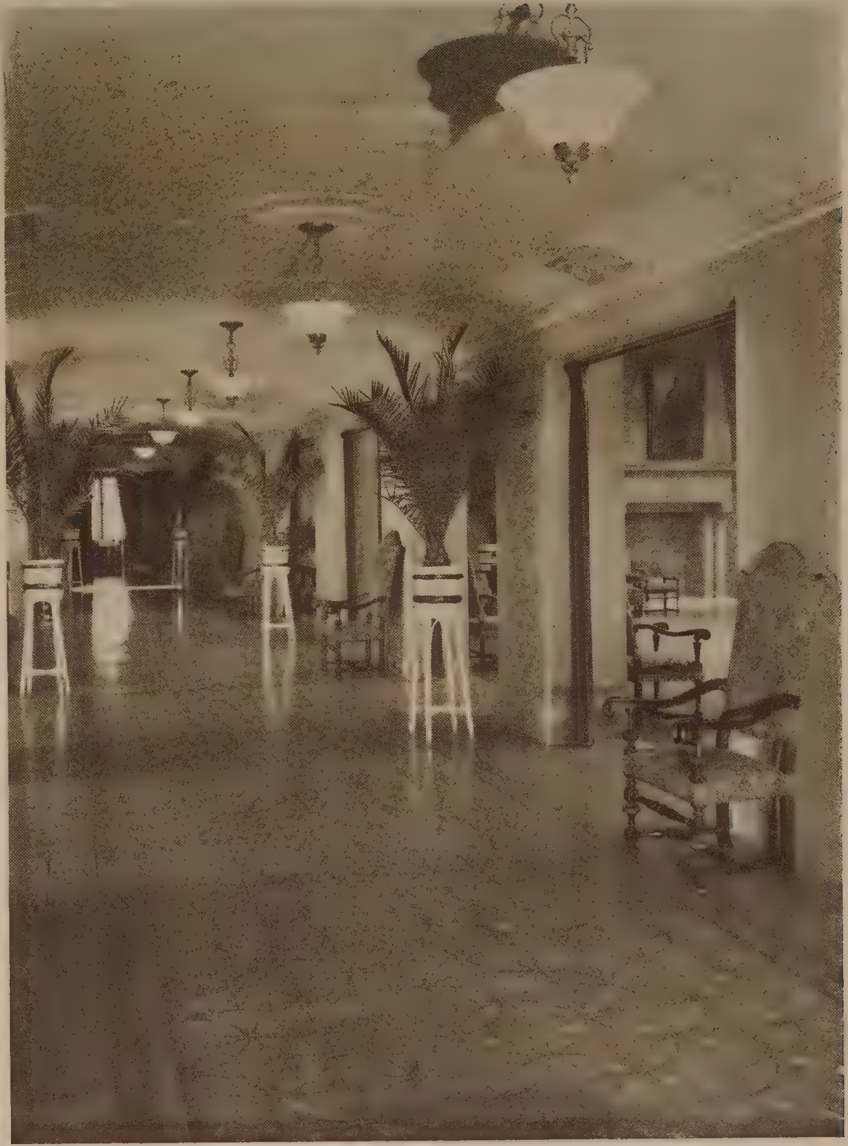
DINING–ROOM.

Philip M. Julien, Architect.

CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.

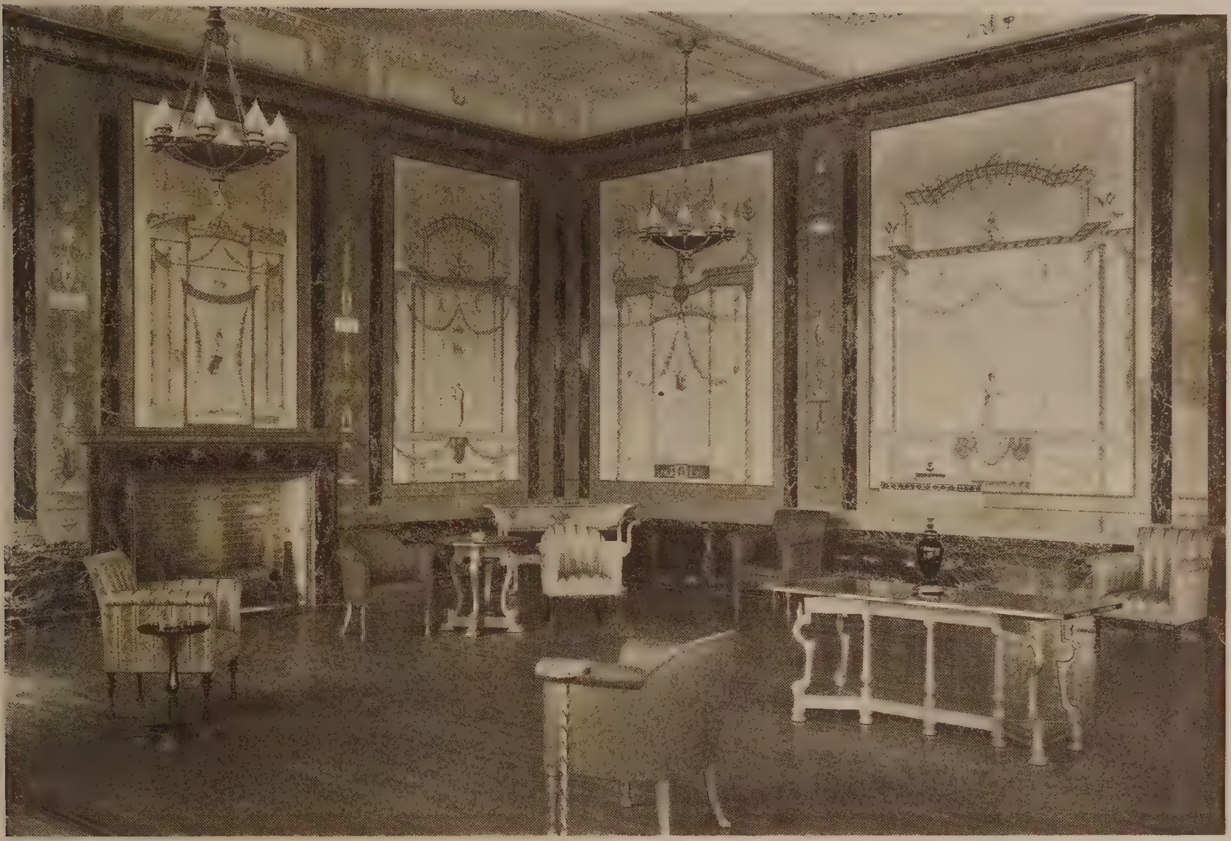


DETAIL OF FIREPLACE IN LOUNGE.

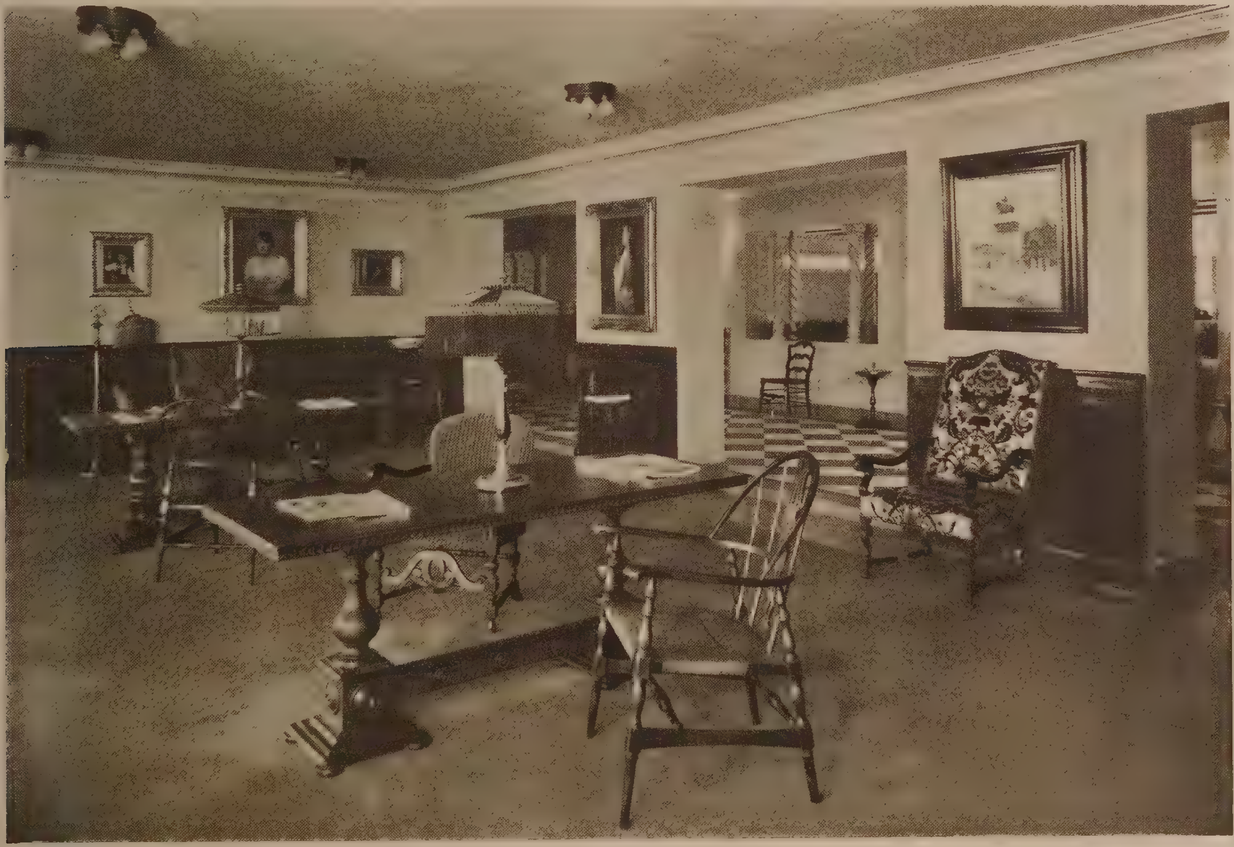


LOWER HALLWAY, SHOWING LOUNGE. Philip M. Julien, Architect.

CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.



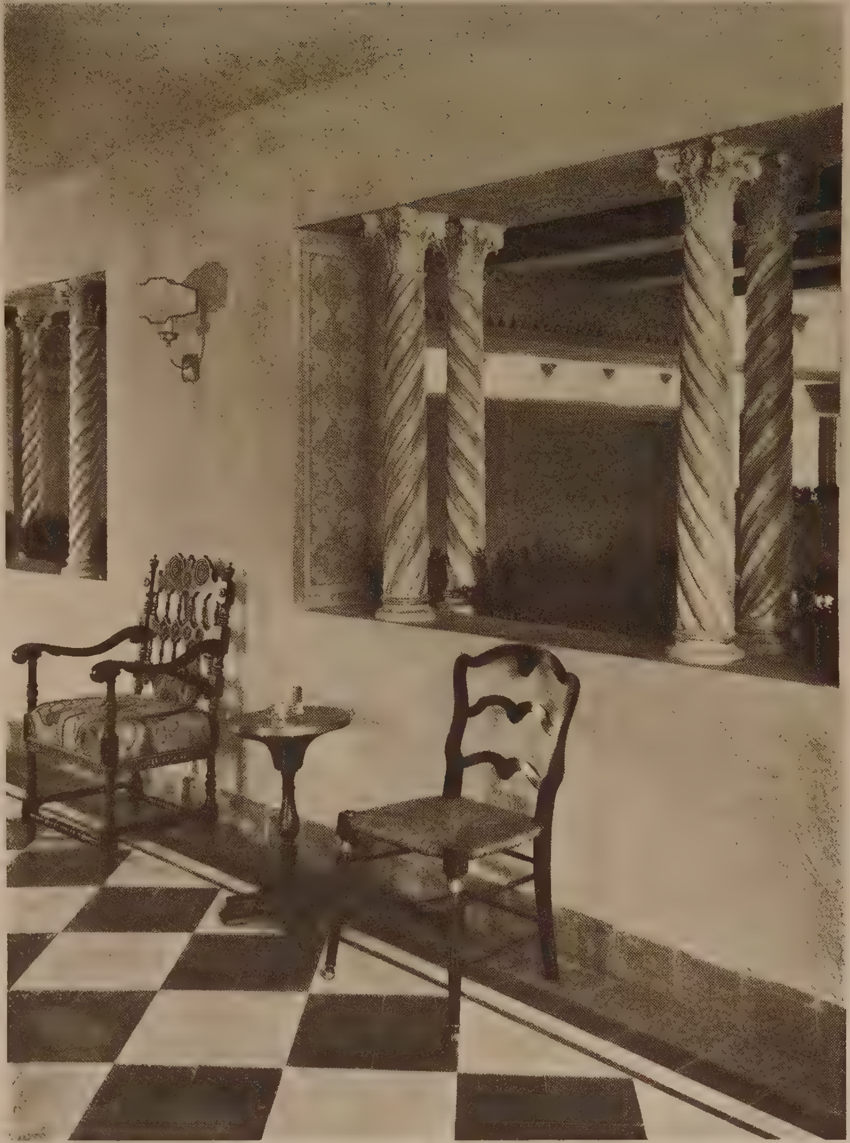
POMPEIAN ROOM.



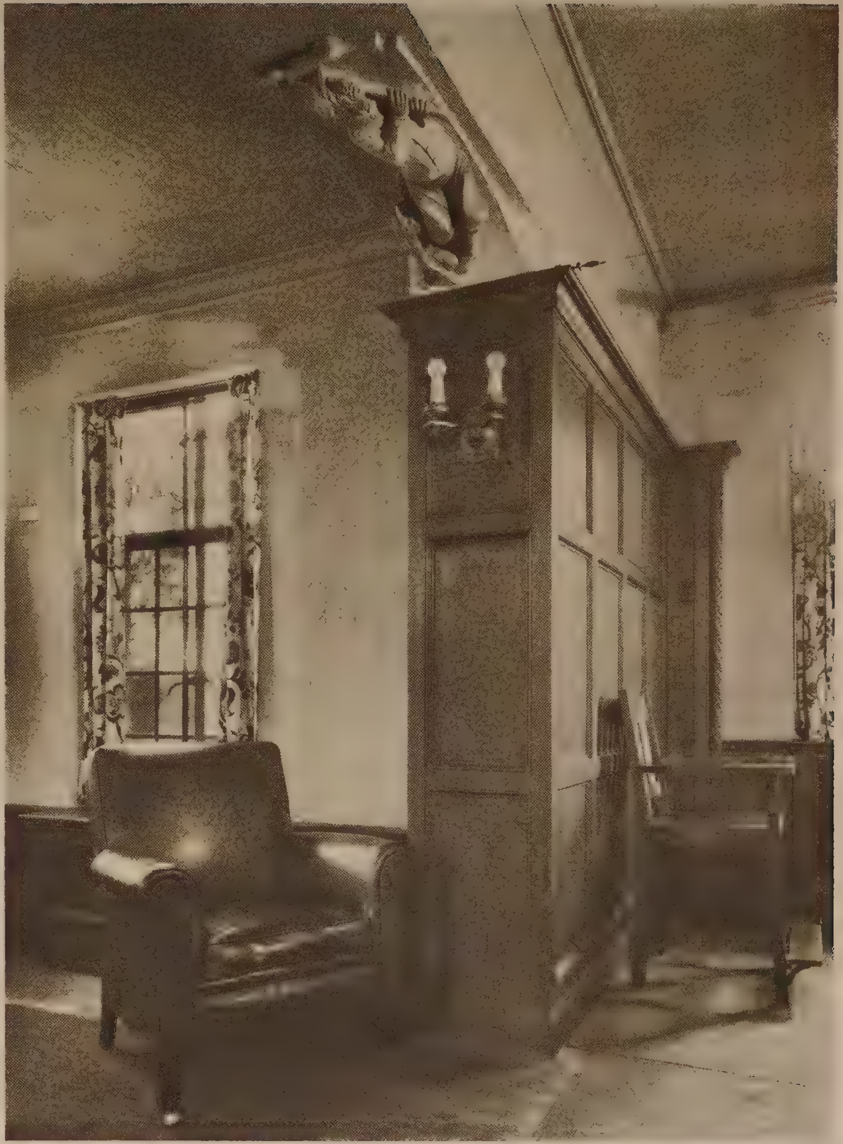
READING–ROOM, TOWARD UPPER HALL.

Philip M. Julien, Architect.

CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.



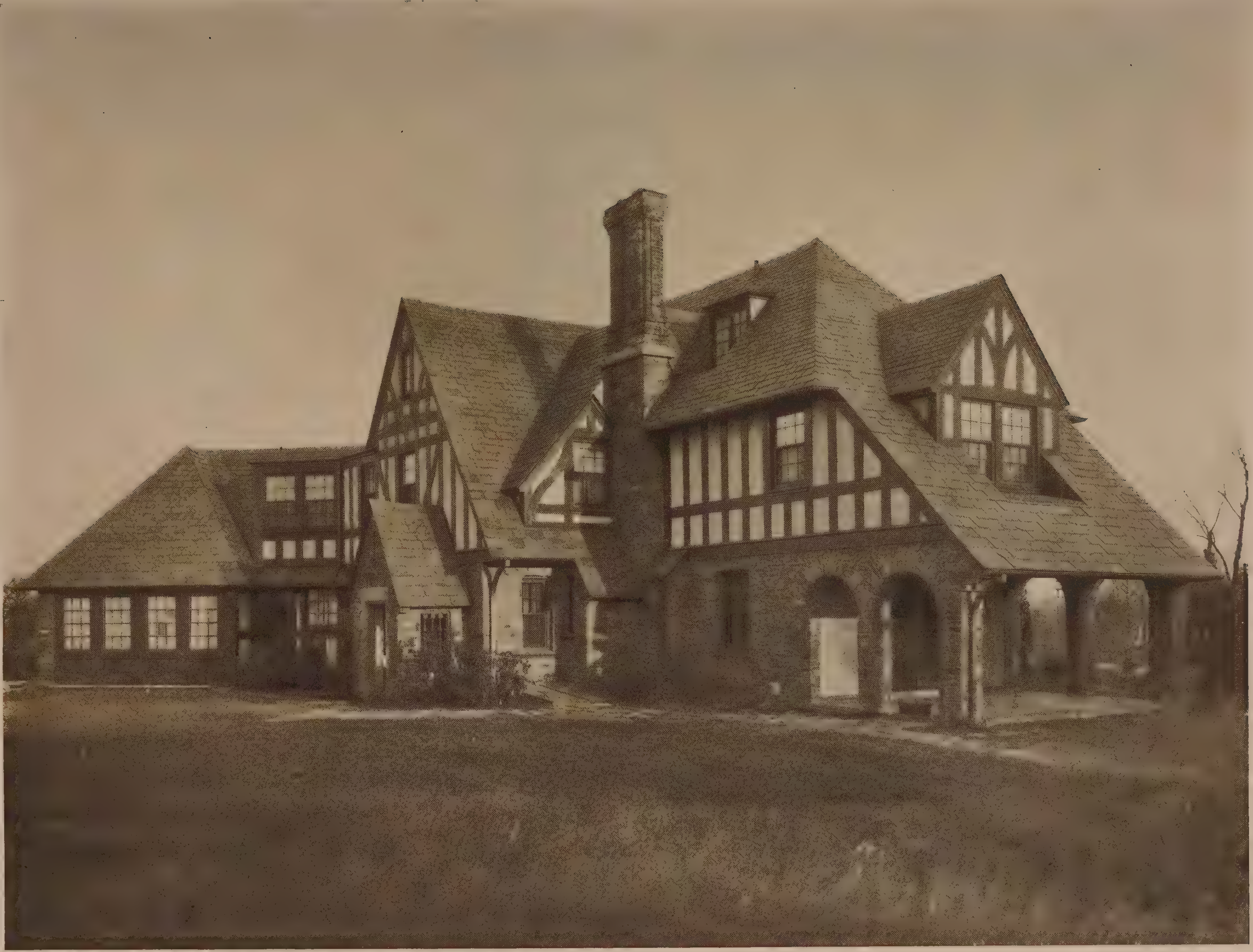
UPPER HALLWAY, TOWARD LOUNGE.



DETAIL OF BILLIARD-ROOM.

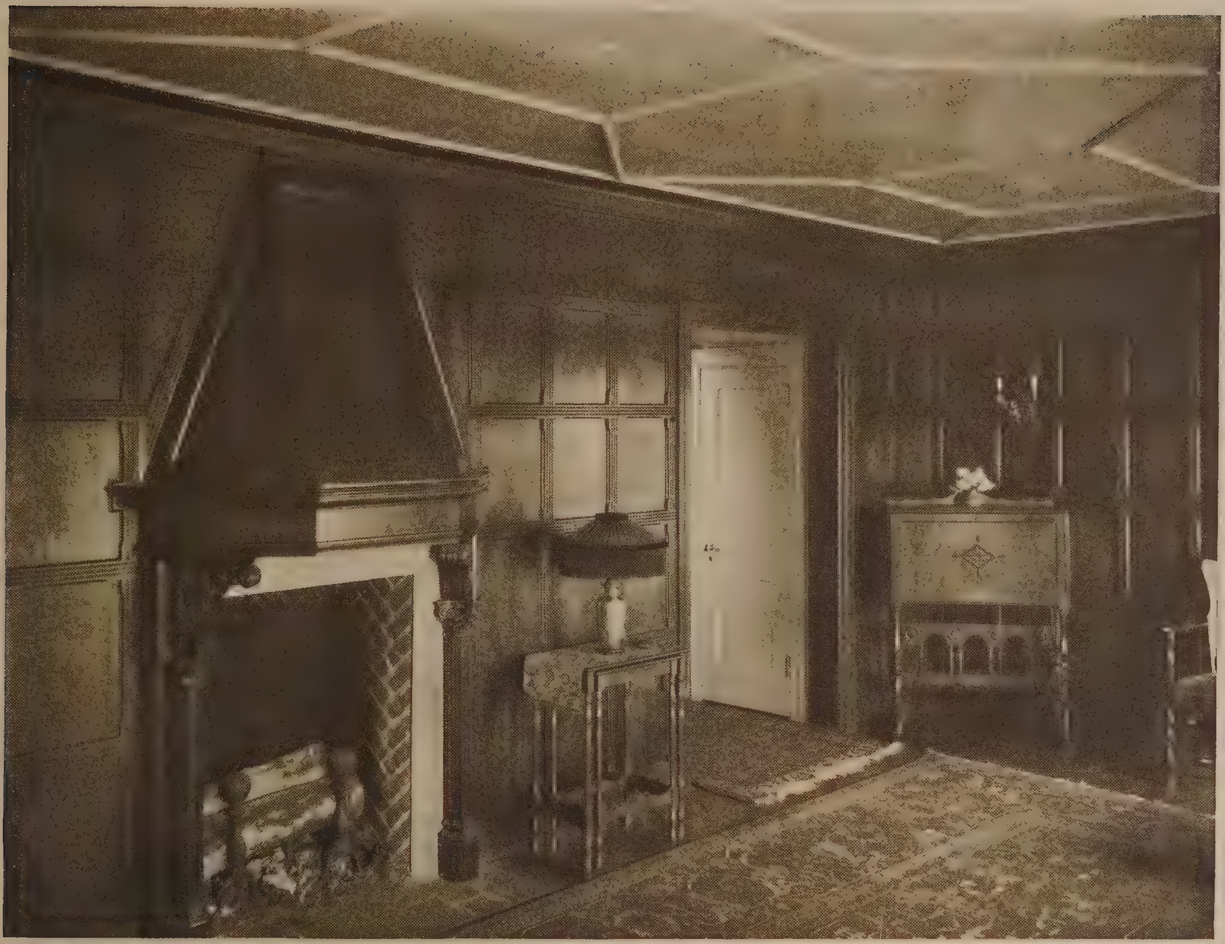
Philip M. Julien, Architect.

CONGRESSIONAL COUNTRY CLUB, WASHINGTON, D. C.

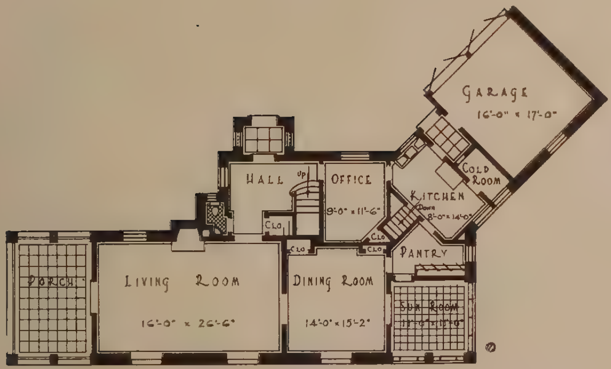


HOUSE, FREDERIC G. WARNER, NARBERTH, PA.

Wallace & Warner, Architects.



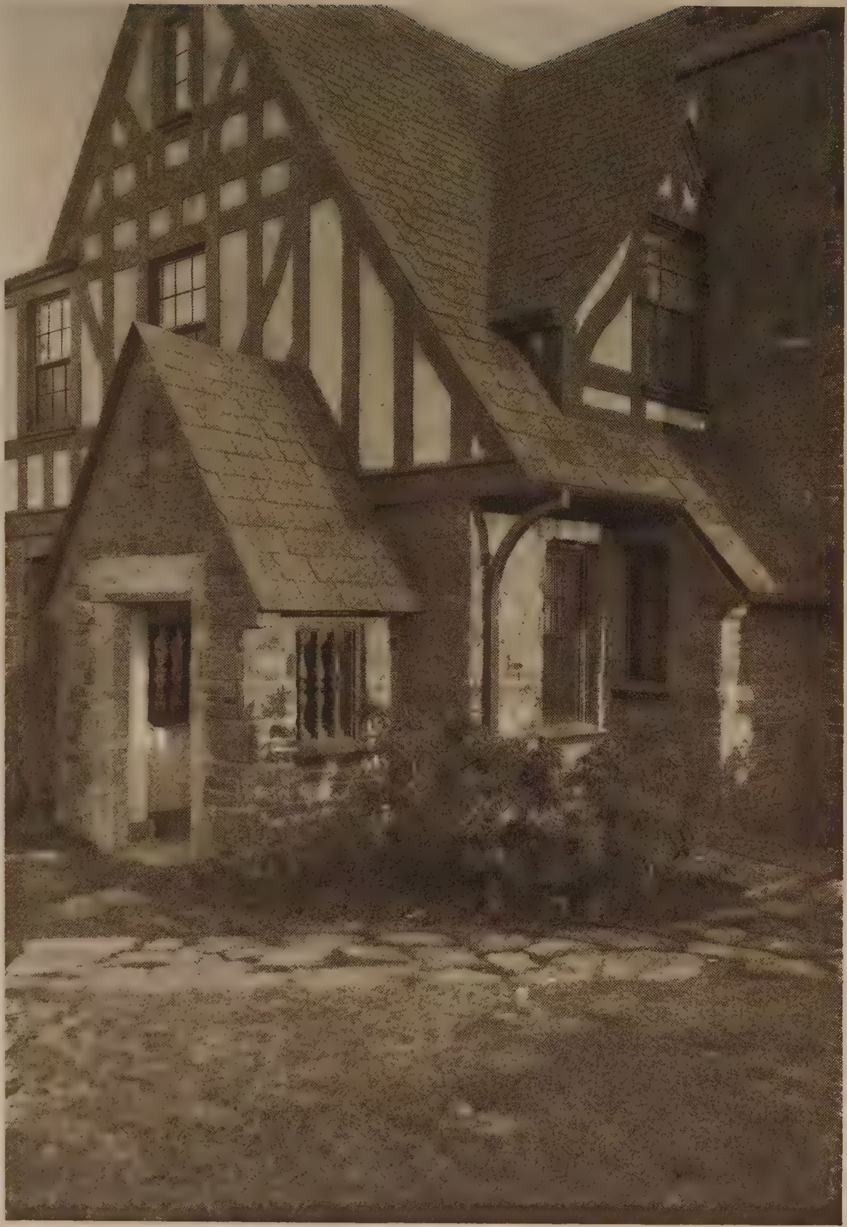
LIVING-ROOM.



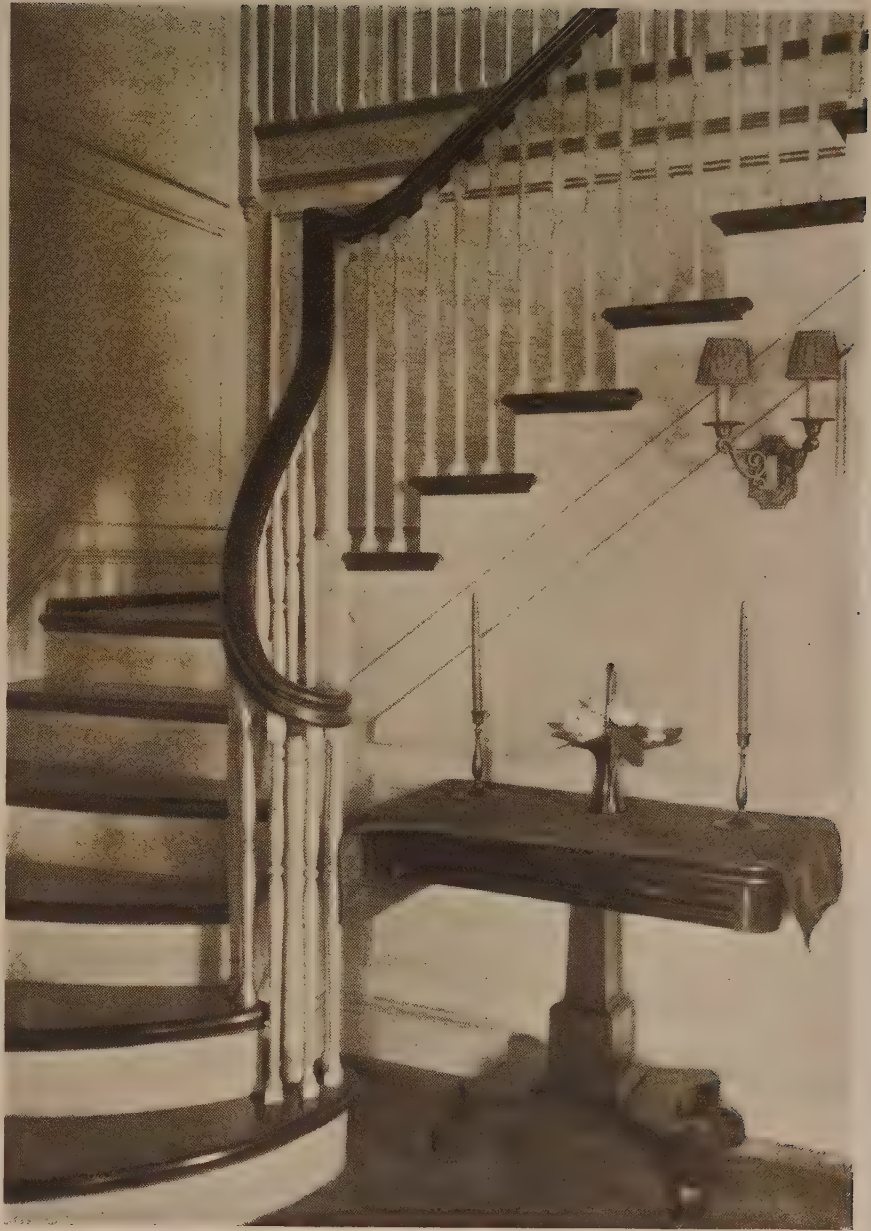
PLANS.

Wallace & Warner, Architects.

HOUSE, FREDERIC G. WARNER, NARBERTH, PA.



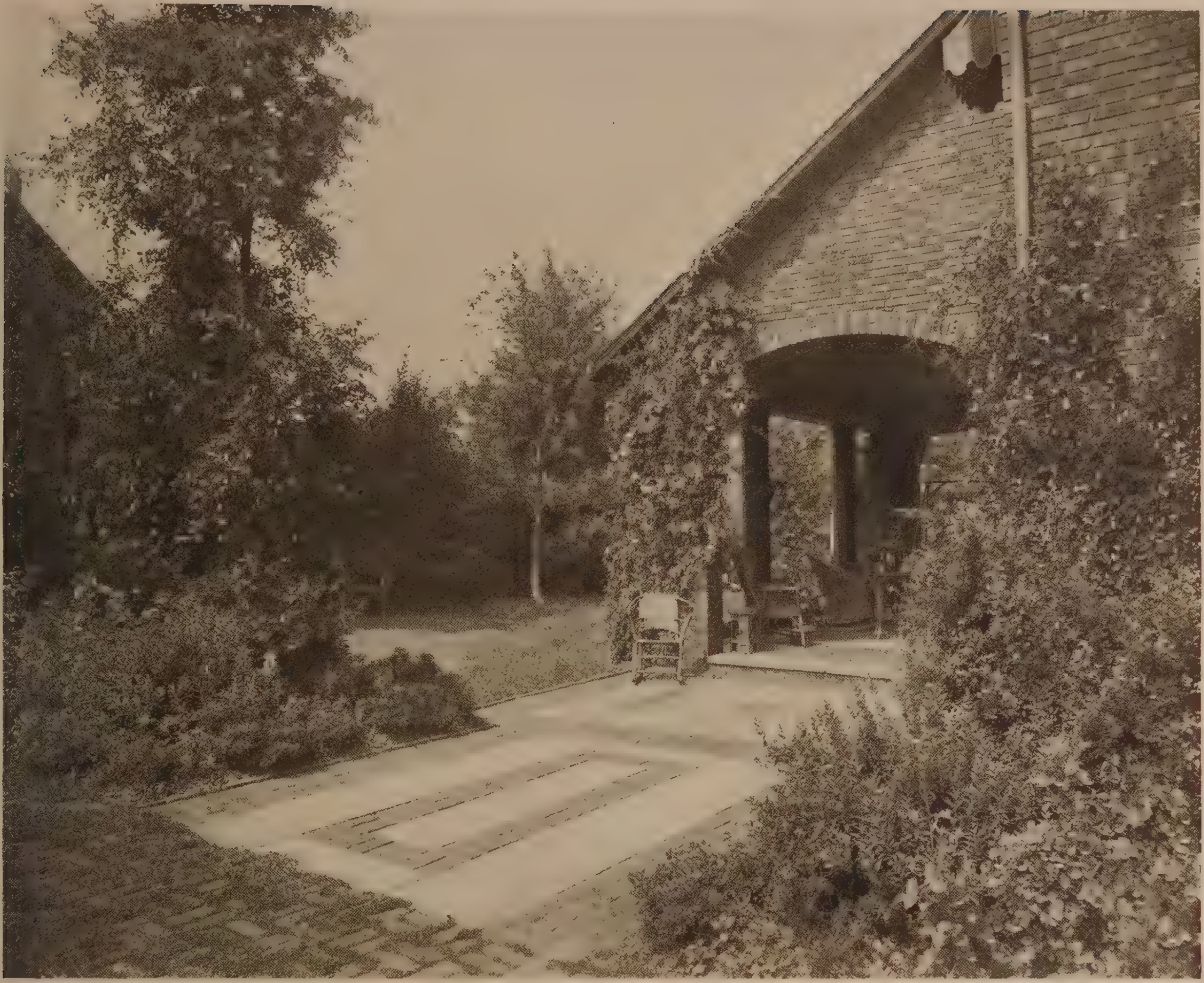
ENTRANCE DETAIL.

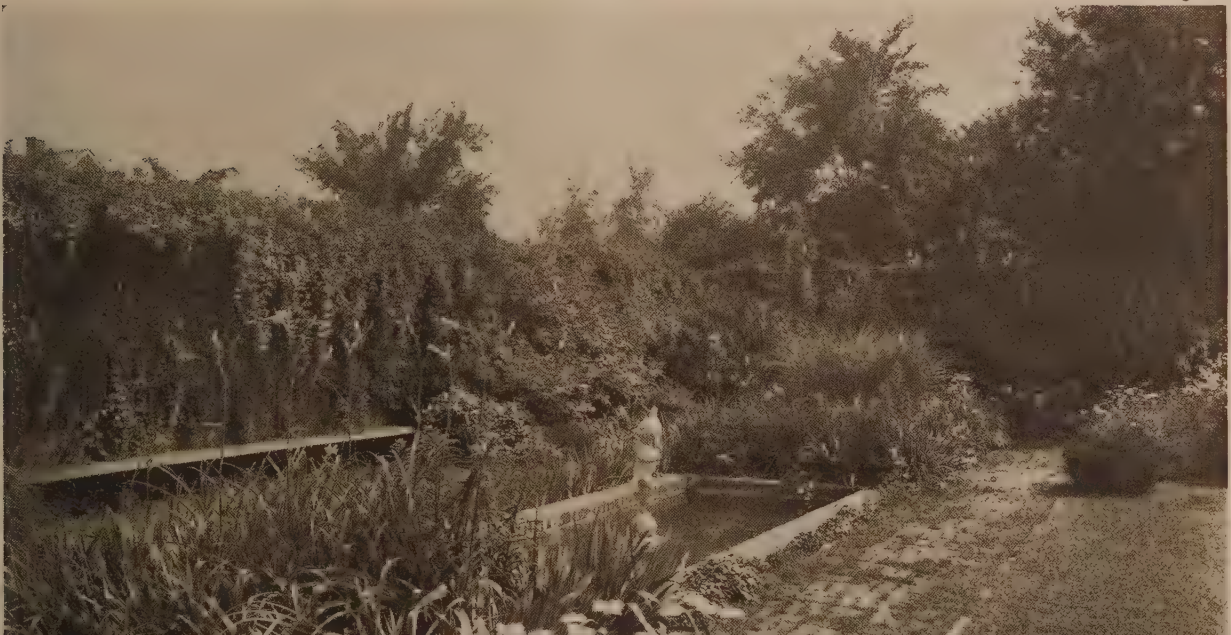


HALL AND STAIRWAY.

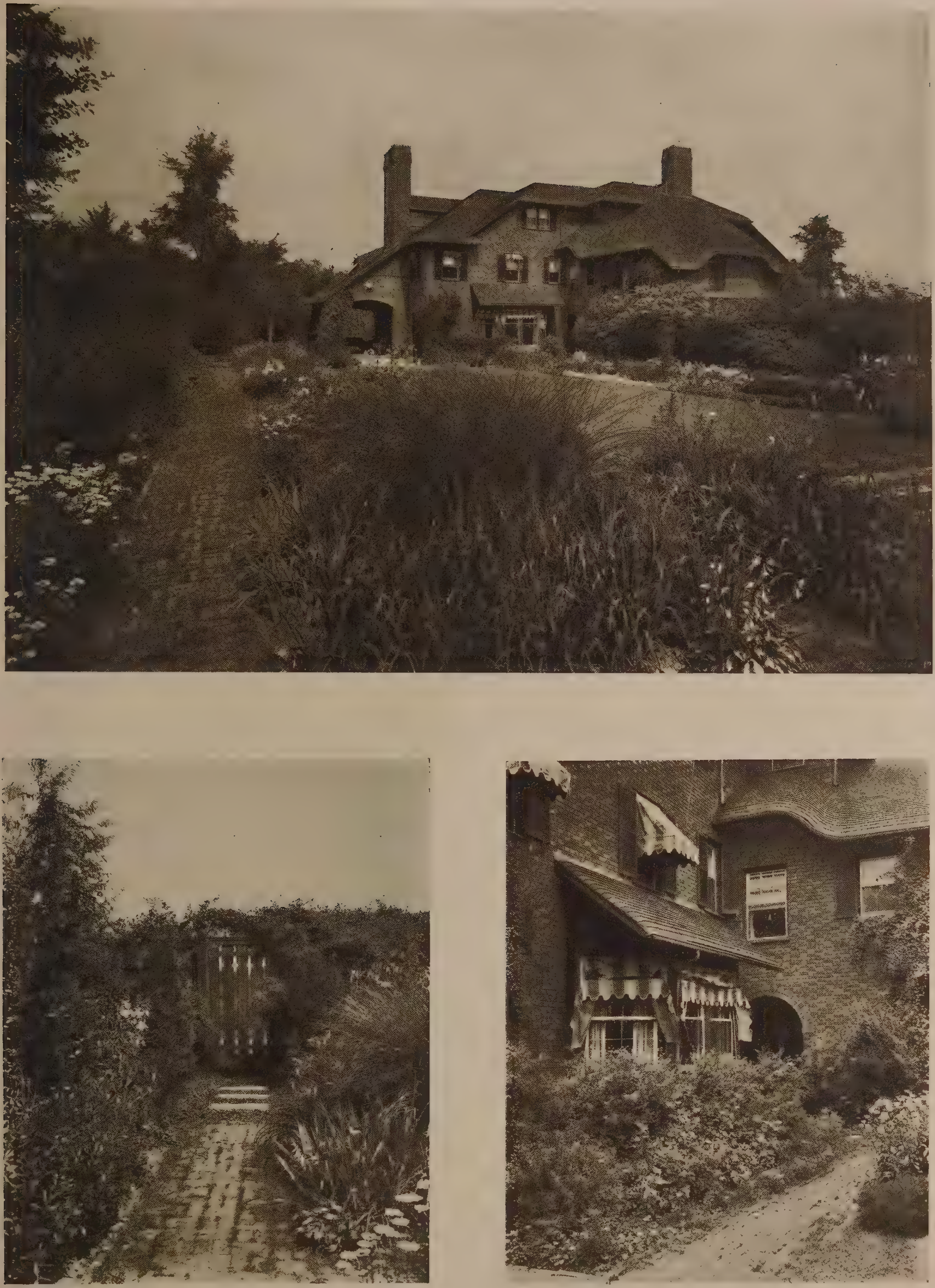
Wallace & Warner, Architects.

HOUSE, FREDERIC G. WARNER, NARBERTH, PA.





GARDEN, W. HAYS, CLEVELAND, OHIO. Wm. Pitkin, Jr., Landscape Architect. Seward H. Mott, Associate.



GARDEN, W. HAYS, CLEVELAND, OHIO.
Wm. Pitkin, Jr., Landscape Architect. Seward H. Mott, Associate.

Book Reviews

THE DICTIONARY OF ENGLISH FURNITURE FROM THE MIDDLE AGES TO THE LATE GEORGIAN PERIOD. By Percy Macquoid and Ralph Edwards. With a general Introduction by H. Avray Tipping—Vol. I (A—Ch) Large folio. Charles Scribner's Sons, New York.

There are few subjects more fascinating to the collector or to the student of the crafts, than that of old English furniture. All through New England are old houses that contain some treasured pieces of authentic old English furniture, and the builders of the new places all over the country are forever on the hunt for old pieces to give color and the charm of the past to the new environment. There are also thousands of so-called old pieces that to the wise bear no authentic marks of the past, beyond a similarity in design. Copies are made and sold as "genuine antiques" that are born within our own times and some of them are so skilfully aged that they give even the expert moments of doubt.

We have many books of reference available, on English furniture, most of them illustrated, and they have done a great deal to make old furniture better-known and added to the ever increasing number of collectors. One of these books that many will recall is "A History of English Furniture," by Mr. Macquoid, one of the authors of this book.

He has devoted years to the most minute investigation of the development and history of English furniture and from the mass of legend and surmise he has endeavored to reconstruct a great reference book on the subject that shall have, as far as possible, the character of a definitive last resort. In the form of a dictionary one has immediate access to a particular subject without the need of wading through chapter after chapter of generalities, words are subordinated to illustration, though enough descriptive words are included to make the illustrations fully illuminating. Among the very interesting illustrations are a number in the introduction written by Mr. Tipping that give the human backgrounds of some old pieces. For instance, there is the picture of Richard II feasting, showing an interior of 1475 with the feasting table, benches, draperies, etc.—and there are famous English rooms with their furniture in place.

If you are looking for a particular example of old English chairs by one of the famous designers you will turn to chairs and find page after page of illustrations of every known type, and you may start earlier in the alphabet and find baby cages, barometers, benches, and of course beds in profusion.

You may learn of the famous Adam Bros. and of other noted designers and of the work that made them fashionable, famous, and rich; you can see the way bookcases were built and some historic examples in English homes, and see some beautiful examples of English carpets.

In addition to the profusion of illustrations in black and white there are a number of beautifully printed color plates.

"It is a labor-saving book, constructed with the view of yielding clear and immediate knowledge to all that consult it. Take the treatment of one of the most important items of furniture such as the chair. The letterpress sets forth its origin and its development on an evolutionary scheme with literary and historic, ethical and æsthetic allusions and elucidations. The necessity for wearisome verbal descriptions is avoided by the system of illustration. Some 170 examples, chosen to exhibit the types and varieties of succeeding ages, are photographically reproduced, are arranged in chronological order, and are briefly described, independently of the general letterpress. Short but equally systematic accounts are given of the less important kinds of furniture, of the men who, as designers and craftsmen, are known to have been connected with furniture production, of the processes and materials used in furniture construction, of the various terms employed, now and in the past, in reference to furniture. As to this last category, some selection and exclusion has been necessary to avoid an overcrowded canvas. But the aim has been that any one wishing information as to any name or word clearly connected with furniture may find that word in its alphabetical place with either some definition and description attached or a reference to where they are given. It is hoped that the aim has been adequately realized and that few seekers will be disappointed.

"A study of any one of the more important articles in the Dictionary, be it beds or chairs, cupboards or tables, will give the reader an insight into the history of English furniture and into its place in the changing domestic and social habits of the people of this island. It will show a movement from little to much, from simple to complex, from roughly wrought to skilfully constructed. It begins with the carpenter, picks up the joiner, and ends with the cabinet-maker. If it is wished rapidly to survey the whole subject, it is first convenient to class furniture under three leading heads, and then proceed to watch the changes and developments in each. The heads are:

"1. Furniture to put things on: (*a*) Tables on trestles, generally large but a few small. (*b*) Cupboards, sometimes, as the name implies, boards or planks, single or superposed, for the display of silver plate, sometimes partly enclosed. (*c*) Desks for reading, generally confined to students, religious and lay.

2. Furniture to put things in: (*a*) Chests with lids, the most usual and persistent form of locked receptacle for putting away all forms of goods. (*b*) Aumbries, forming what we call cupboards by setting a door to a wall recess or to carpentry framings of various shapes and kinds.

3. Furniture to sit or lie on: (*a*) Benches, forms, and settles, often, and especially in halls, fixed. (*b*) Stools, which were the commonest and most movable pieces in this class. (*c*) Chairs, essentially ceremonial, marking the superior position of the user, sometimes fixed and with a wooden canopy and generally heavy. (*d*) Beds, sometimes portable, but generally composed of a frame on which rested the bedding, and which was set within a draped enclosure.

"In the miscellaneous class we must include all such draperies; also wall hangings of tapestry and other tissues; carpets to set on tables, cupboards, and window-seats; cushions to add comfort to settles and benches; andirons and the other chimney implements that appear constantly in inventories; as also a few other accessories, although they may partake more of the character of utensils than of furniture."

Mahogany and gilt cabinet in the Gothic taste, made for Horace Walpole and decorated with drawings by Lady Diana Beauclerck in 1783. (From Strawberry Hill.)

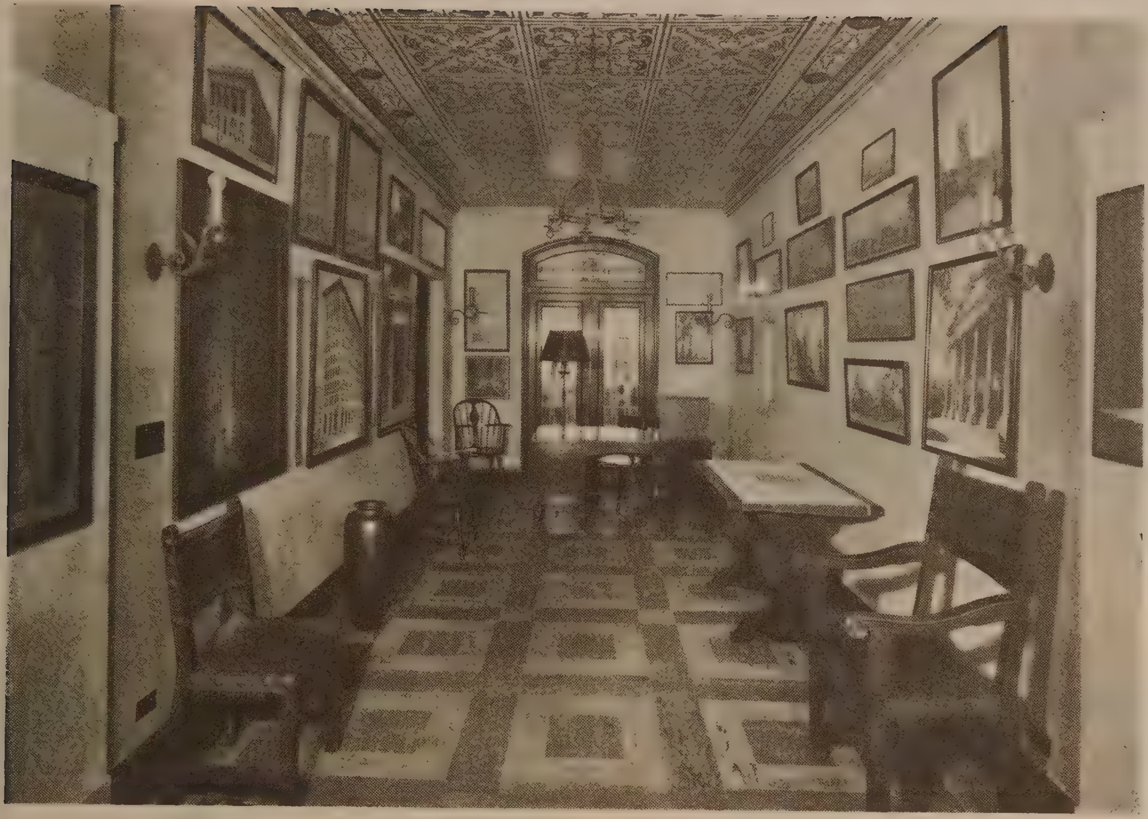
DRAFTING-ROOM MATHEMATICS. Problems of the Drafting-Room Simply and Clearly explained for the Draftsman and Architect. By DeWitt C. Pond, author of "Concrete Construction for Architects."

Mr. Pond, himself a practising architect with an exceptional training on the engineering side of his profession, and with a background of teaching at Columbia University, has written this book as the result of many requests for information and help. Its purpose, as he says, is to include such problems as one might encounter while performing his daily work in the drafting-room. Such a book should prove of the greatest usefulness and it will no doubt be welcomed by the profession and especially by all draftsmen for whom it will prove a handy and friendly first aid in time of trouble.

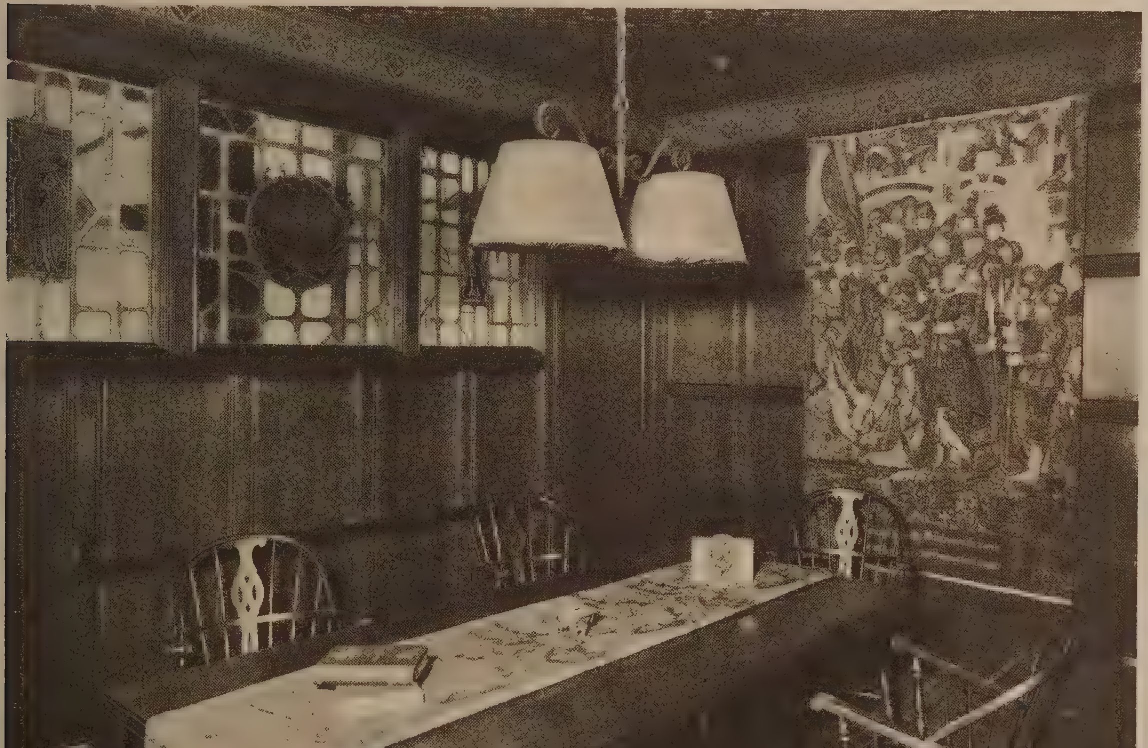
HOUSE AND HOME. A Manual and Text-Book of Practical House-Planning. By Greta Gray, A.M., Graduate in Architecture, Massachusetts Institute of Technology, and in Household Arts, Teachers College, Columbia University, formerly Professor of Home Economics, University of Wyoming. 189 Illustrations in text.

The author has dealt with sanitary, economic, social, and architectural problems in an elementary and non-technical way, with the hope that it will lead those who use it to study the subject further for themselves. The book is designed, moreover, as a text for students and members of study groups, and it should be equally interesting to the general reader and prove helpful to all those people not architecturally trained who look forward to the day when they may buy or build their own home. It is meant, however, not only to assist those who may buy or build, but to guide people in the selection of rented places, so they may help to create a demand for dwellings that shall be beautiful, comfortable, and safe.

Contents: "The Home and the House," "The Location," "Plans," "House-Planning," "Materials and Construction," "Plumbing," "Heating," "Lighting," "Built-in Conveniences and Labor-Savers," "Exterior Design, Part I—Ancient Mediæval Architecture," "Exterior Design, Part II—Modern Architecture," "Interior Design," "The Grounds," "The Business of Building," "Alterations," "The Farm House," "Multiple Houses and the Housing Problem," "The Standard House," "Reducing the Cost of Shelter," "Town Planning," "Owning versus Renting," "Suggestions to Teachers." Bibliography, Glossary, Index.

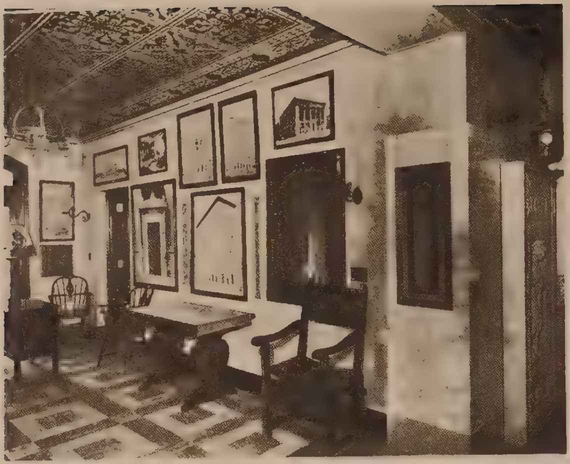


RECEPTION ROOM.

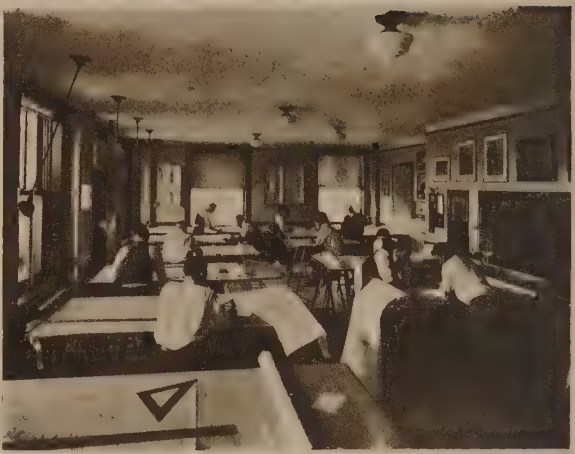


CONSULTATION-ROOM.

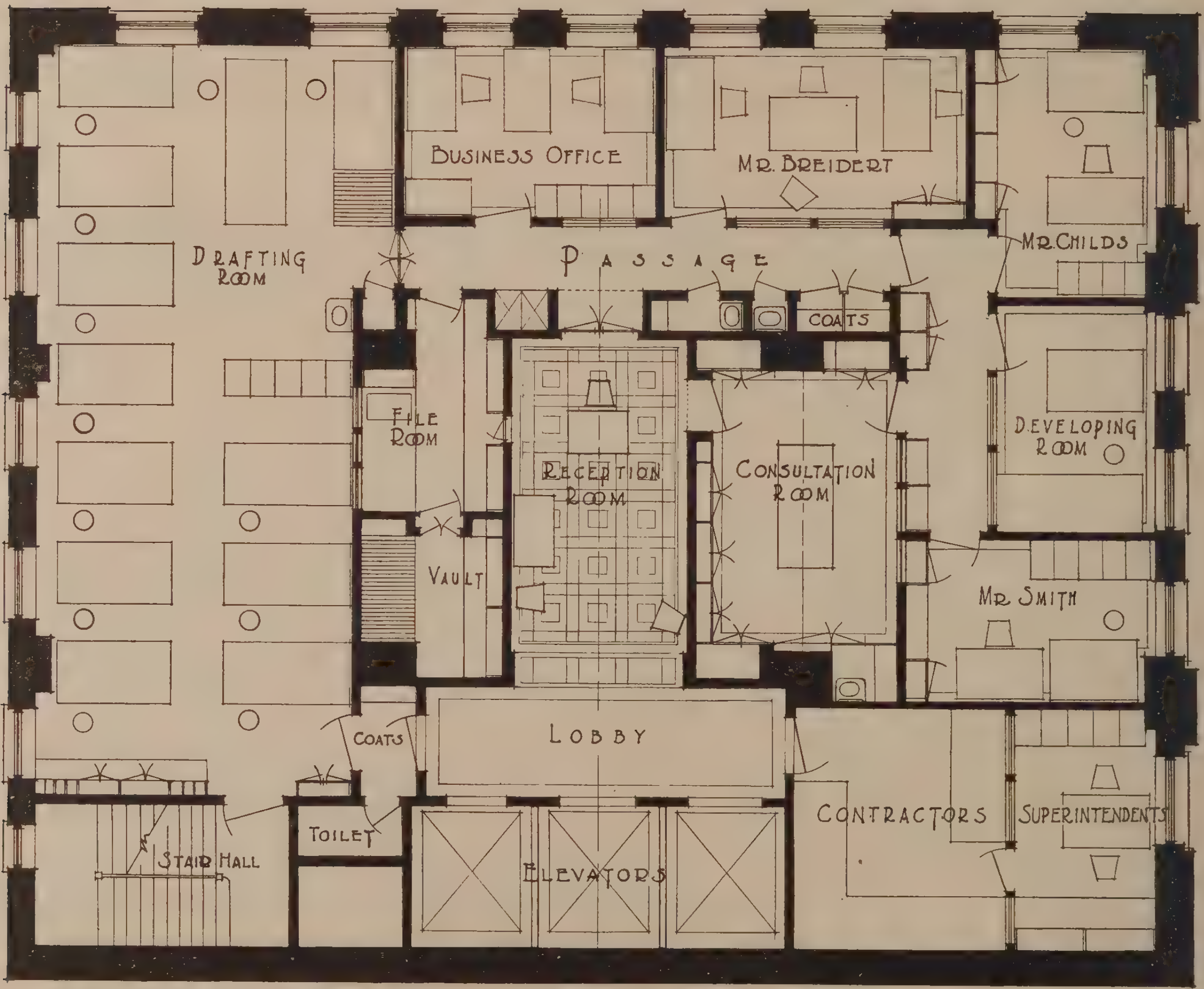
OFFICES, CHILDS & SMITH, ARCHITECTS, CHICAGO, ILLS.



RECEPTION-HALL.



DRAFTING-ROOM.



OFFICES, CHILDS & SMITH, ARCHITECTS, CHICAGO, ILLS.

Construction of the Apartment-House

By H. Vandervoort Walsh

Professor of Construction, School of Architecture, Columbia University, New York City

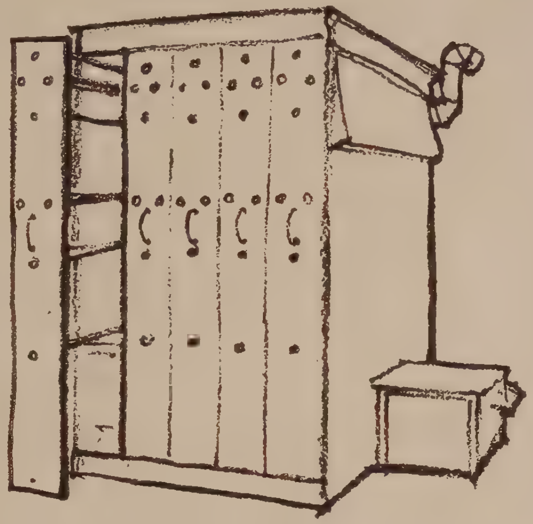
ARTICLE XXII

Miscellaneous Equipment

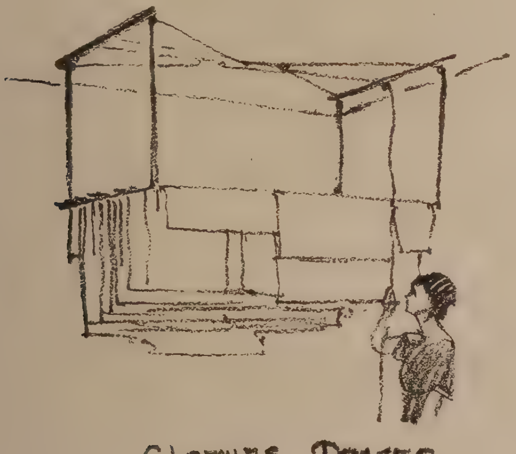
APARTMENTS have developed refinements of mechanical equipment, as much, if not more, than any other type of domestic architecture. Competition for new tenants by apartment builders has made them keen observers of the attraction that new household devices have for the housewife, and they do not hesitate to install new wrinkles, if they will help to differentiate their building from others in the neighborhood. Lack of space has also been the cause of creating efficient methods of storing things, like kitchenettes, kitchen cabinets, beds that fold into closets, and the like. The concentration of many people in one building has brought about the need of improving service, and this has resulted in the invention of such things as dumb-waiters, incinerators, drying machines, and similar devices. If one were to point out the most important advance over the past that new apartments show, it would be to enumerate these mechanical devices, for they are the most obvious.

In calling attention to this equipment, it is obviously impossible to mention and describe all of the thousand devices that are on the market, but we can suggest enough to stimulate the reader's observations. For a beginning, let us consider the kitchen. There are many defects in the kitchens of the older apartments that no longer exist. They were badly ventilated, the stove, ice-box, sink, and laundry tub were dirty and inefficient, the method of garbage disposal was crude, service deliveries were awkward, floors and walls were of materials that deteriorated rapidly, cracks developed where roaches increased in such numbers that the place became over-run with them, plumbing pipes were often made of lead, hot water was not delivered regularly and there were many other similar conditions which to-day, in a new apartment, we would not tolerate one day.

If we take the average middle class apartment, to-day, and observe the conditions in the kitchen, we will notice a great change. In fire-proof buildings, the floors are finished under the plumbing fixtures and the stove with tile, and the remaining portion with a sanitary composition floor. The walls are covered with tile. Even in the cheaper apartments, one will often see composition floors and hard plaster walls, painted with enamel. Ventilation is better, too. Over the stove is a hood connected with a flue extending to the roof, and windows are placed high and almost up to the ceiling. The fixtures, the laundry tubs and the kitchen sink are of better materials and the old wooden tops that used to make the kitchen look so dirty have been discarded in favor of the white enameled metal tops. In many apartments gas stoves with special heat regulators for the oven and pilot light ignition for burners are seen to have taken the place of the old type of stove that had to be lighted with matches and that had the oven below. The kitchen dressers, too, are more sightly, for instead of being finished with dark stain or varnish and designed without much thought of what they are intended to hold, they are enameled white and drawers and cupboard doors are provided for special uses. In some apartments, fine enameled, steel kitchen cabinets are noticeable with sliding work table, storage for flour, sugar, pans, boxes of cerials, and many other things. A broom closet and a special closet for the ironing-board are not uncommon. A clothes-rack which can be pulled up to the ceiling is now almost a standardized part of the apartment kitchen. Ventilated metal boxes, installed in the outside wall, are provided to hold the garbage-pail, unless there is an incinerator. The latter adds much to the comfort of the tenants, for there is nothing so crude and disagreeable as the business of having to send garbage down the dumb-waiter. Even the refrigerator seen in the average apartment is much superior to that installed only fifteen



CLOTHES DRYER



CLOTHES DRYER

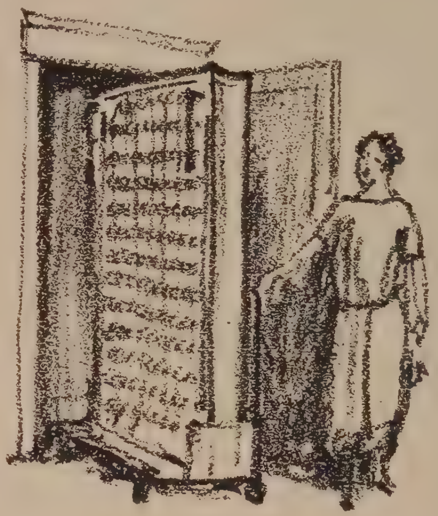
years ago, and now a certain choice number of apartments are installing individual refrigerating plants that do away with the nuisance of ice delivery.

If the apartment kitchen seems small and compact, the kitchenette, often seen in two-room apartments and folding-bed apartments, is a marvel of compactness. With ice-box on the left, sink in the middle and small gas stove on the right, and cupboards and china closets above, the working apparatus of a whole kitchen can be compressed within a depth of about 2 feet and a width of about 7 feet. Unless adequate ventilation is provided for these kitchenettes they are not very satisfactory, and some failures are noticeable because of neglect in thinking of this part of the problem.

In the average apartment, the wash is supposed to be done in the laundry tubs installed in each kitchen, but in the high class apartment, where servant help is taken for granted, only one tub is provided in the kitchen in which a few odds and ends can be washed, but the main body of the wash is supposed to be done in the general laundry, placed in the cellar or in a pent-house on the roof. The most approved arrangement is to have each tenant assigned to a set of tubs, a hot air dryer, and ironing-board in the general laundry. The tubs and ironing-board of each tenant are separated by open wire caging with doors that can be locked and closed. The dryers are gas operated, and the clothes are hung in the cabinet on bars fastened to sliding frames that, from the outside, look like a chest of drawers on its side. It takes about thirty minutes to dry clothes placed in this apparatus. No gas flames or fumes come into the drying compartment where the clothes are hung. Only clean air goes in one end and out the other. The fumes of burned gas go out through a flue. In some apartments roller ironing machines have been installed for general use of the tenants. The rollers are heated by gas and are suitable for ironing all kinds of flat work, like sheets, towels, pillow-cases, napkins, and the like. If washing-machines are installed, it is generally an individual equipment, and not a part of the general convenience of the building. Likewise it is quite possible that some apartments have installed a laundry chute, similar to the type used in hospitals, but we have not observed any being erected in the new buildings, although they would be of some service.

The greatest advance has been made in the equipment of the apartment bathroom. In the average middle class apartment the walls and the wainscot of this room are faced with tile. The bath tub is built in and has a very fine shower equipment. The lavatory is of modern design and the water-closet is flushed with a flushometer instead of the old-fashion flush tank. Built into the walls are tile holders for soap, towels, tooth brushes, and glasses, and a medicine-closet with adjustable shelves and mirror is set into the wall over the lavatory. Indeed, the difference in the equipment of the bathroom of the middle class apartment and that of the high class apartment is not one of conveniences but of quality of fittings. Of course, in some of the most expensive apartments the shower-bath may be installed as a separate unit, and the tile flooring and wainscot may be more artistic than plain white, but the luxury of the bathroom in the cheaper apartments is a close competitor.

Service delivery in the middle class apartment in some cities is still sent up the dumb-waiter. Although the mechanism of this device has in recent years been improved, it can hardly be called the ideal method of controlling the deliveries. In the better class apartments service elevators take the place of the dumb-waiter, and so far this has proved itself to be the best arrangement. In some cities and small towns, service deliveries are sent up outside stairs which connect with back porches. We have seen some buildings, four stories high, with these wooden back porches and stairs that look extremely dangerous when considered from the point of view of safety of escape in fire. For apartments three stories or less, this arrangement is perhaps satisfactory, but when the building is five and more stories high the stair delivery at the back is impractical.



FOLDING BED

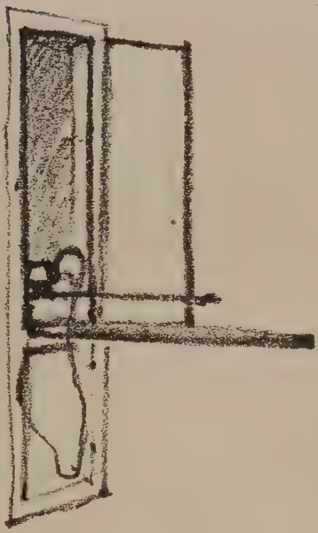
Closets and storage space in the average apartment is one of the weak features of modern designs. A general space is set aside in the cellar into which the tenants can place a limited amount of material, but this is not useful for articles that must be gotten at often. Only those closets that are directly connected with the apartments themselves are of real value. These closets are often of such poor shape that they are not efficient. One closet for three-room apartments, as is often seen, shows a neglect of this necessary part of the comfort of tenants. To overcome some of these difficulties, special patent closets with clothes-hangers suspended on carriers have been installed. They are usually of shallow design and more like a recessed wardrobe.

In some apartments the idea of saving space has been carried so far that a distinctive type of plan has grown out of the mechanical folding devices that are installed. We refer, of course, to the apartment having beds that fold into a closet, and that have kitchenettes, instead of kitchens, and breakfast alcoves instead of dining-rooms. The typical unit of such apartments consists of one large room about 12½ by 18, into which the bed can be swung from the closet and out of which open the breakfast alcove and kitchenette on one side and bathroom, dressing closet, and bed closet on the other side.

Such arrangements as the above crowd into one building the maximum number of families, and the line of demarcation between the term hotel and hotel apartment becomes very slight. But the crowding together of many people in one building has developed the need of intercommunication. Telephones are usually installed in each apartment and there is a central switchboard for the building, operated by the hall-boy or the superintendent. Letter-boxes and bell-banks are sometimes equipped with special telephones that connect with each apartment. These are electric and not the old type of speaking-tube that was so very common a few years ago. However, this convenience is not as prevalent as it used to be, for in the high class apartment the custom has grown-up of announcing visitors through the regular telephones, operated from the switchboard similar to the system installed in hotels.

All of these mechanical devices that make for easier living have had much to do with the development of the apartment idea which stands for the most successful community method of living so far developed by man.

We have heard some say that they believe the apartment is the future way that all will live in cities. There is much room for great improvements in the equipment and design of them before this day comes. For example, one of the great drawbacks is the lack of provision of playroom for children. Some day we will discover the roofs of these buildings and set out open-air spaces for the children to play in, with sand piles, pools of water, flowers, and growing things upon them. When we make the children happy and provide the right equipment for their healthy out-door pleasures in the crowded sections of the cities and remove them from the dirty streets and the poisonous gases of automobiles, then the apartment method of living will go forward with great strides. To-day, unfortunately, there are far too many apartments obviously designed to accommodate only couples without children, for children are considered an economic loss because of their destructive tendencies, which, after all, are accentuated because they are rebelling against the evil conditions to which the grown-ups in our large cities have subjected them, since a child deprived of wholesome fun seeks mischief.

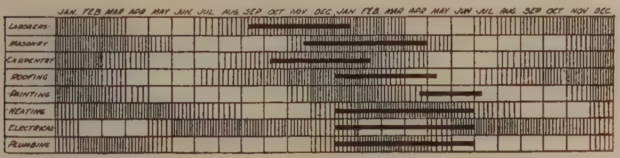


The End

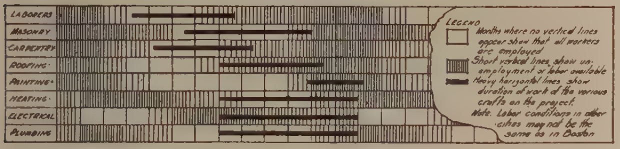
What Is the Best Time of Year to Start New Construction or Repair Work in Your Locality?

THE short vertical lines on the chart printed below represent seasonal unemployment in Boston, Mass., for each of eight building trades.

In the upper half of the chart is shown the schedule of progress of a factory building started in *September*, the heavy horizontal lines indicating the period in which workers in the various trades were employed on the job. The crews of men from each of the eight trades were recruited in months in which some workmen in that trade are usually unemployed.



If Start had been Postponed until April
(Unfavorable Labor Supply)



Planning construction with reference to labor-supply. Chart prepared by William Stanley Parker, of Boston, Mass.

If the same factory building had been started in *April*, the laborers, masons, carpenters, and plumbers would have had to be recruited during months when they are fully occupied—that is, in April, May, June, and August, respectively.

Copies of the chart in blank may be obtained from the Division of Building and Housing, Department of Commerce, Washington, D. C. When filled in to show the seasonal unemployment in the building trades for a given city or locality, they can be blueprinted or otherwise reproduced and circulated among prospective customers, architects, engineers, and contractors for use in planning schedules of building operations. The division requests that copies of these charts filled in to show local employment conditions be forwarded to the Department of Commerce for use in further seasonal studies.

What Can Be Gained by Winter Construction.—With due precautions and proper equipment nearly all construction work can be carried on in winter and at no great difference in cost. The owner may often profit by saving interest on his investment and by securing earlier use of the structure. Although equipment needed for protection and artificial heat in winter construction requires some expenditure and there may be some increase in overhead on the job due to delays from winter storms, these items often may be offset by the saving in salaries and the reduction in the contractor's general overhead. Labor in general is more efficient, as skilled workmen can be more easily obtained. Although relative unit costs of labor in winter and summer vary with the class of work, the cost in winter, especially under first-class management, may be actually less than the cost at other seasons, as shown in Chapter VIII. Building materials usually can be obtained at somewhat reduced prices because of the smaller demand.

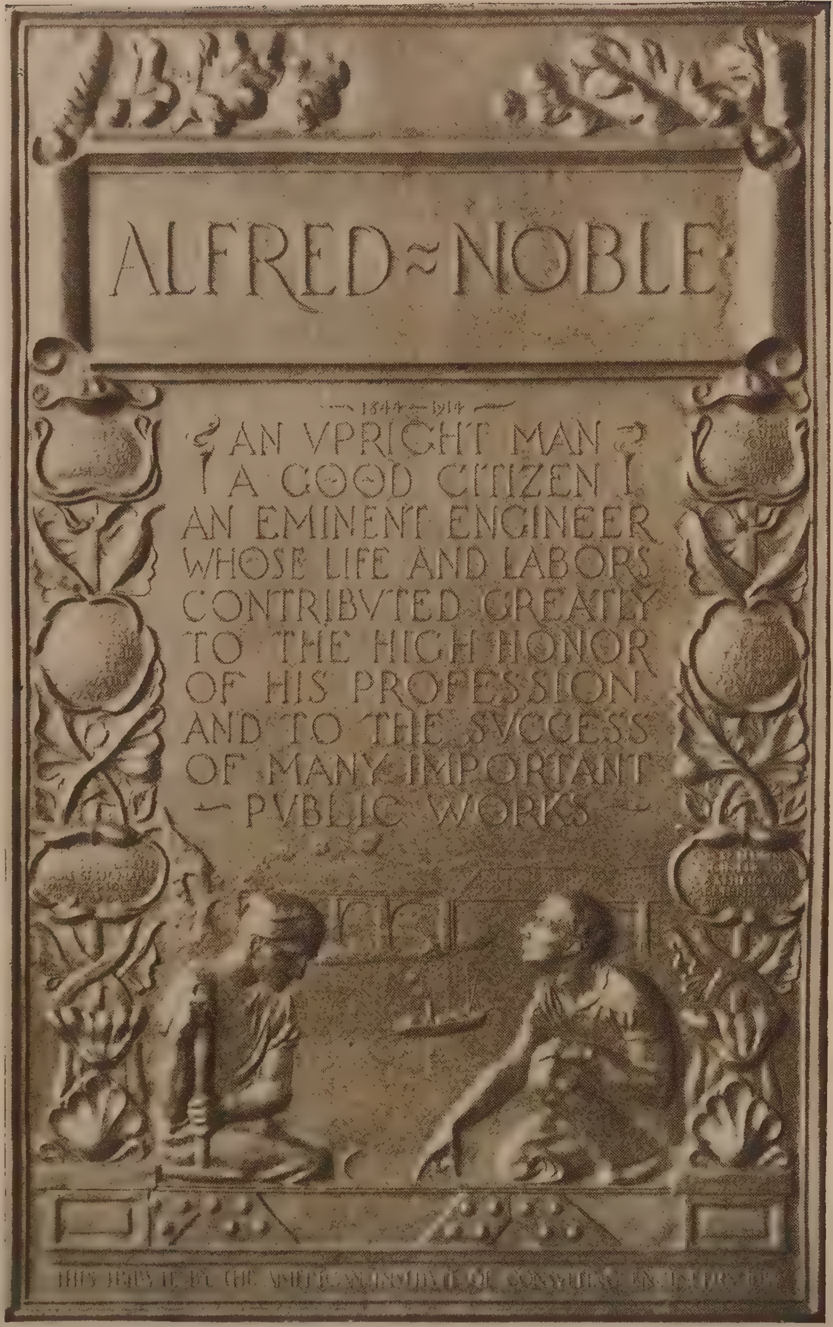
As the methods of handling winter work develop, and as manufacturers, supply dealers, and labor take more interest in encouraging winter work, the cost can be appreciably reduced.

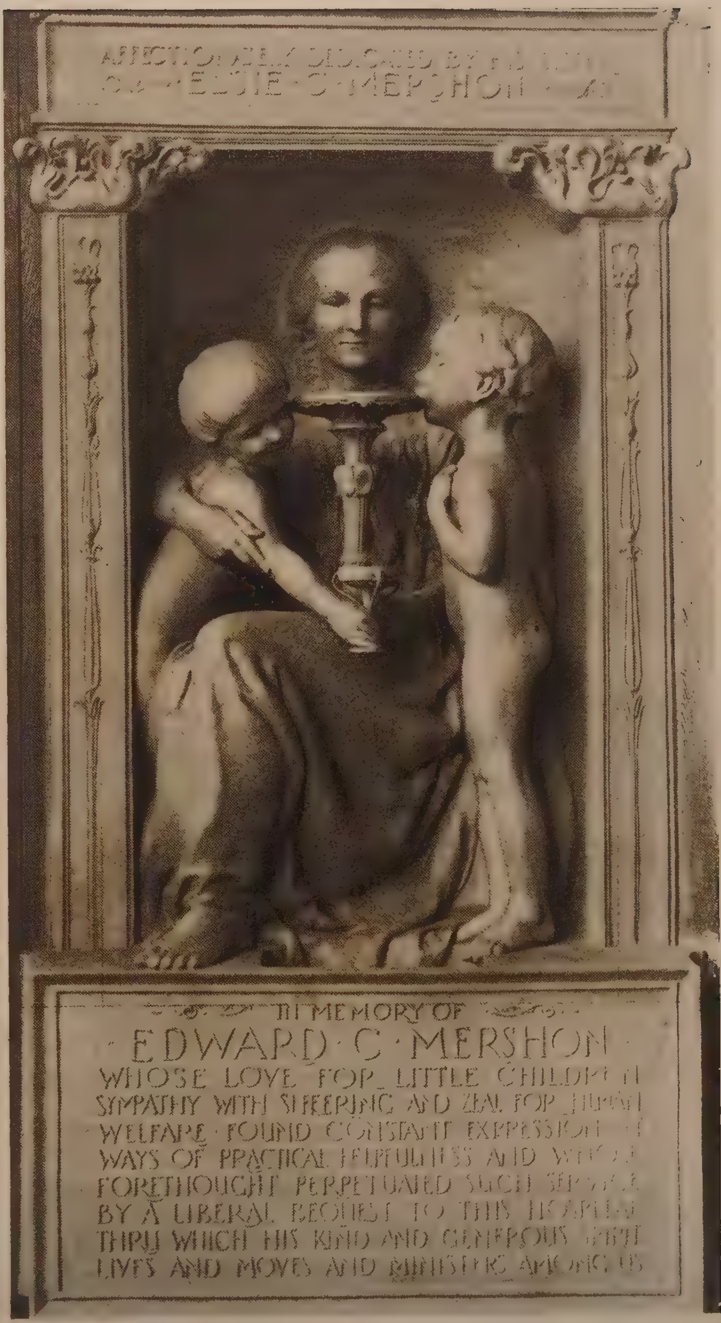
Institute of Research at Lehigh

Staff of Experts Will Undertake Research in Scientific and Economic Fields—To Co-operate With Industry

ANNOUNCEMENT is made of the launching of the Lehigh Institute of Research by the administration of Lehigh University. The management of the new organization which was authorized by the board of Trustees on April 25, 1924, is vested in a board of directors composed of thirteen members of the university's staff, including President Charles Russ Richards. Each man is a recognized authority in his special field.

In announcing the purposes of the institute, the Lehigh board of trustees, of which E. G. Grace, president of the Bethlehem Steel Corporation, is president, stated that the object is "to encourage and promote scientific research and scholarly achievement in every division of learning represented in the organization of the university; and in recognition of the need for further and more exact knowledge in science and in the applications of science to the affairs of modern life. It is believed that this organization will be helpful in stimulating interest in liberal and professional education; and that it will prove to be of value to the professions and industries of the nation."

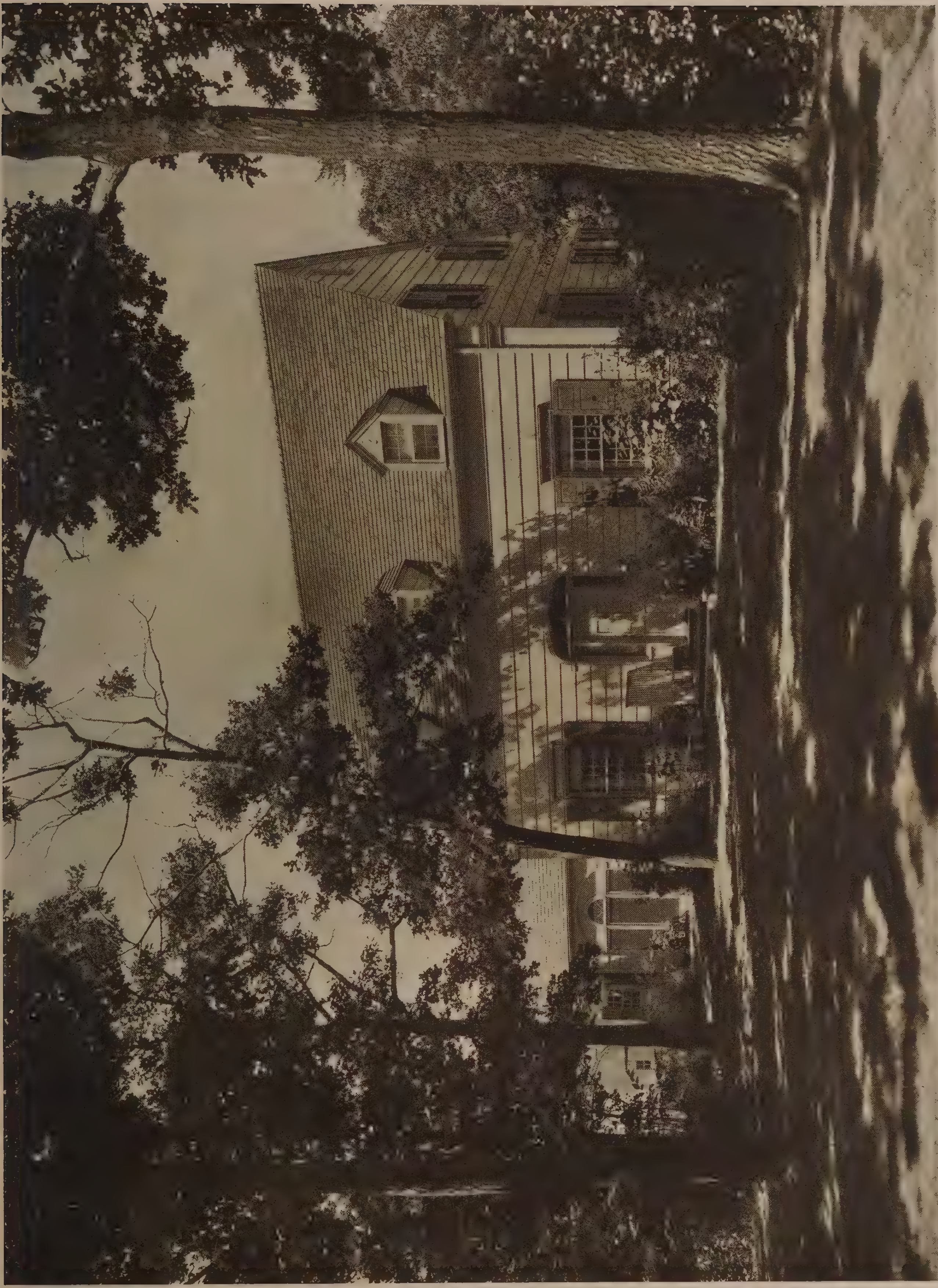



ELSIE · C · MERSHON
IN MEMORY OF
EDWARD · C · MERSHON
WHOSE LOVE FOR LITTLE CHILDREN
SYMPATHY WITH SUFFERING AND ZEAL FOR HUMAN
WELFARE FOUND CONSTANT EXPRESSION IN
WAYS OF PRACTICAL HELPFULNESS AND WHOSE
FORETHOUGHT PERPETUATED SUCH SERVICE
BY A LIBERAL BEQUEST TO THIS HOSPITAL
THRU WHICH HIS KIND AND GENEROUS SPIRIT
LIVES AND MOVES AND MINISTERS AMONG US

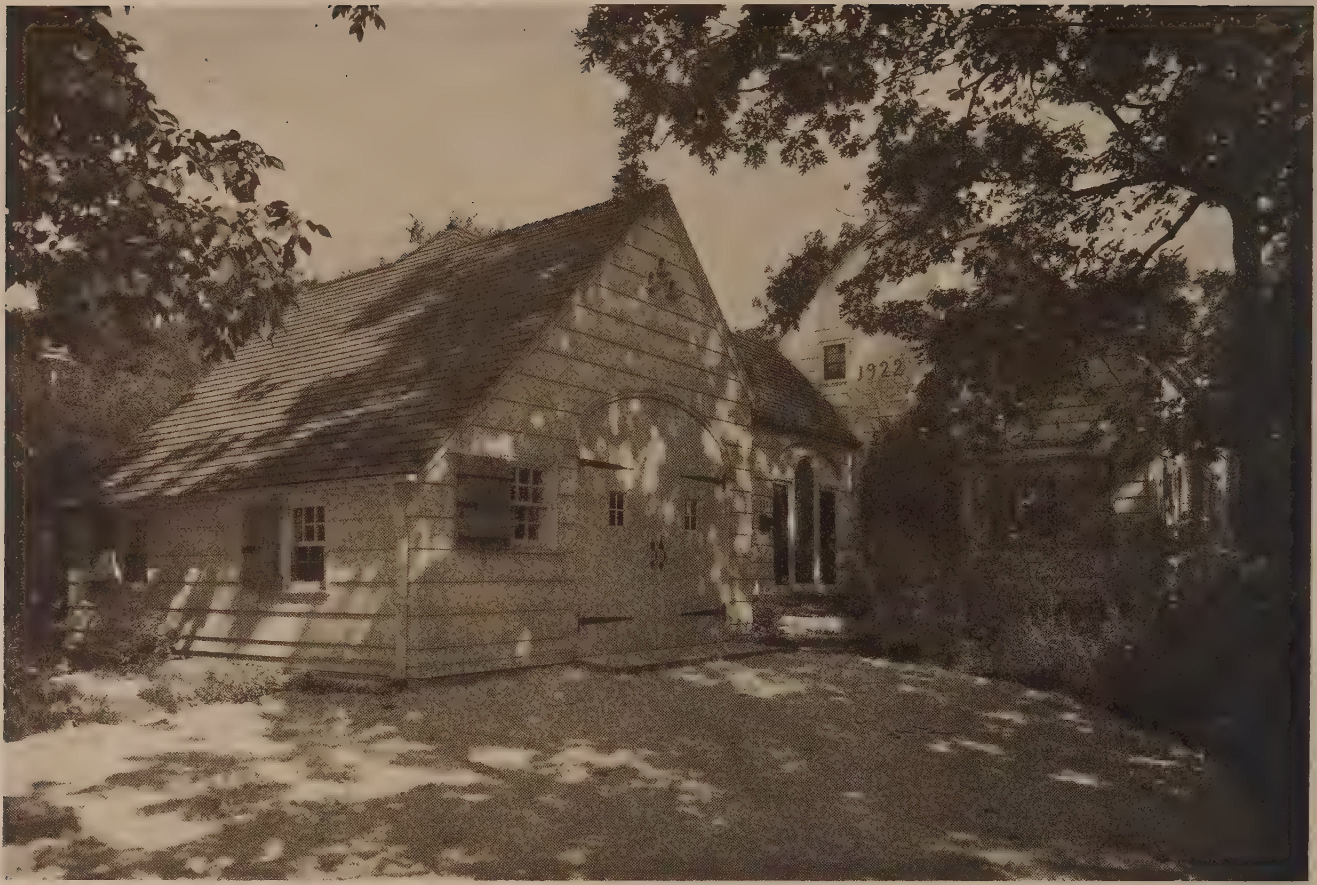
NOBLE MEMORIAL, ENGINEERING SOCIETIES BUILDING, NEW YORK CITY.

MEMORIAL FOUNTAIN.

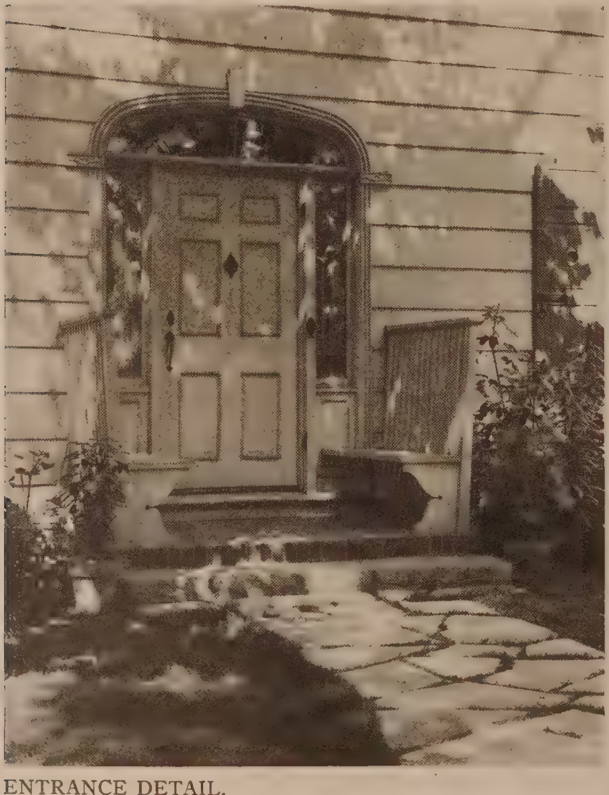
Willard D. Paddock, Sculptor.



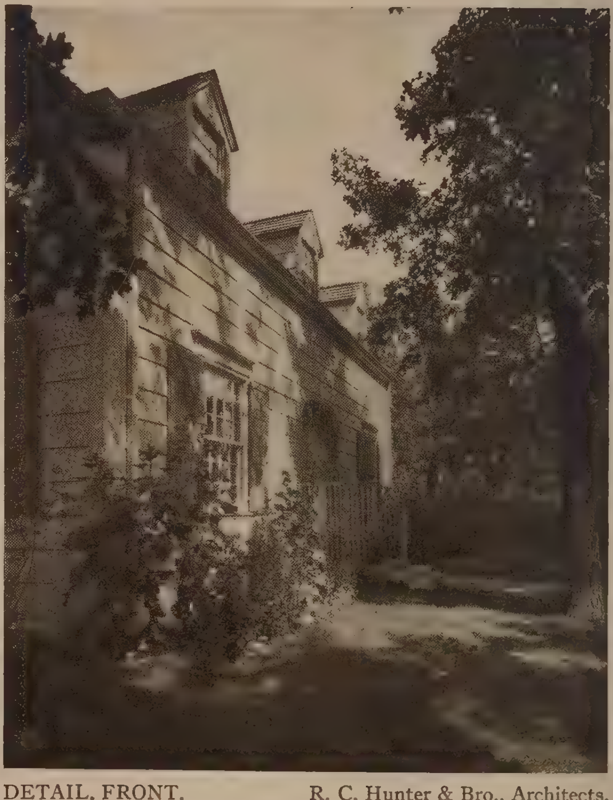
HOUSE, WALLACE GILL, GLENCOE, ILLS. R. C. Hunter & Bro., Architects.



HOUSE AND CONNECTED GARAGE.



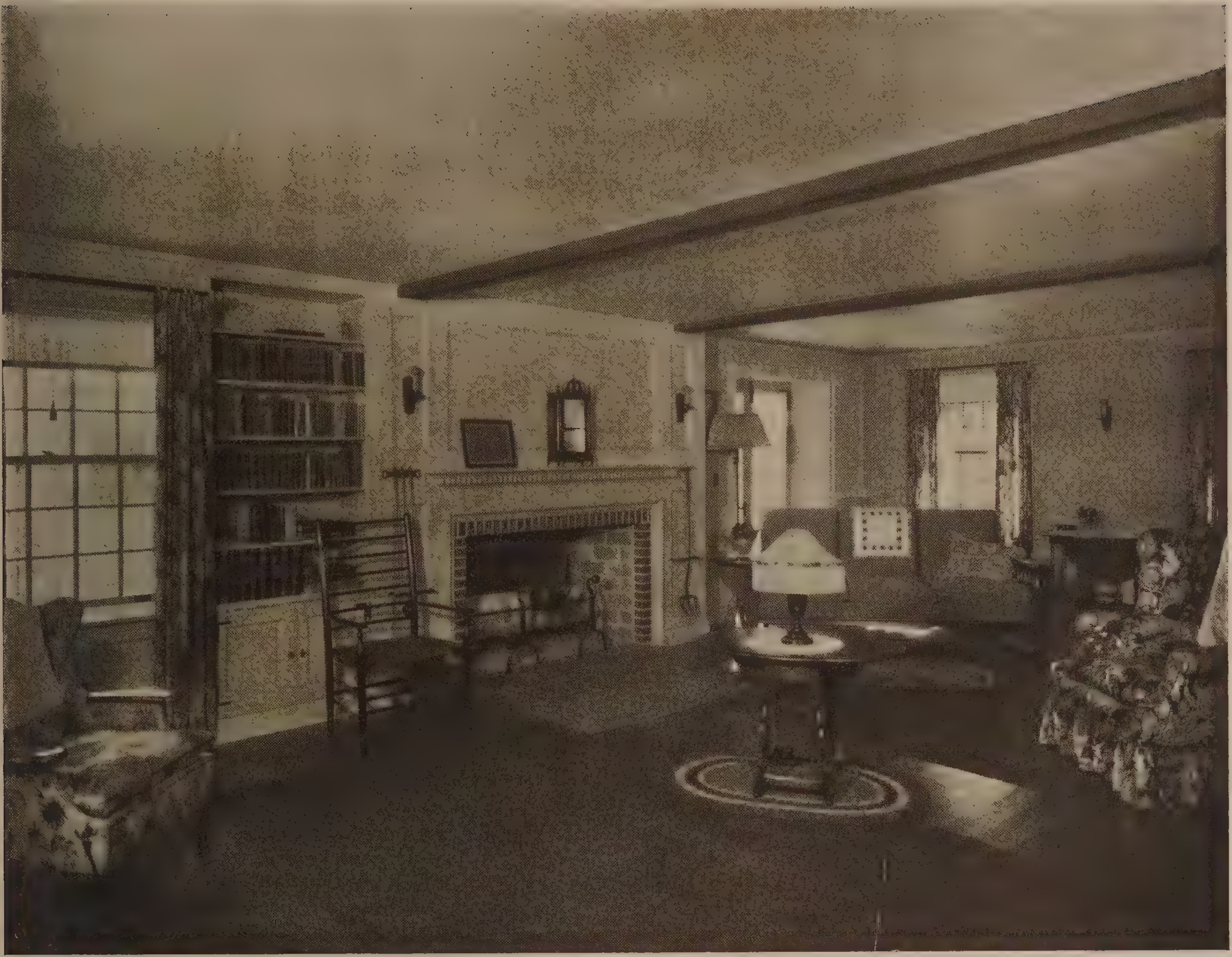
ENTRANCE DETAIL.



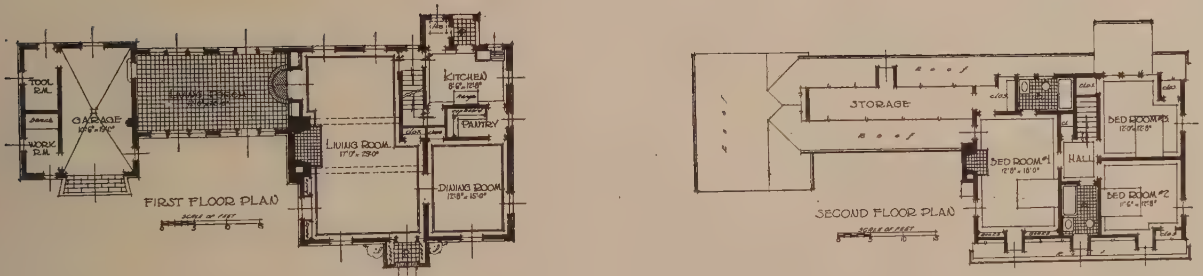
DETAIL, FRONT.

R. C. Hunter & Bro., Architects.

HOUSE, WALLACE GILL, GLENCOE, ILLS.



LIVING–ROOM.



PLANS.

R. C. Hunter & Bro., Architects.

HOUSE, WALLACE GILL,"GLENCOE, ILLS.

Elements Affecting the Workability of Concrete

AN important property of a concrete mixture lies in the ease of placing or pouring. It is important that the concrete fill every part of the form and come in complete contact with the reinforcing bars. It is also of advantage to have the concrete homogeneous throughout; that is, to have the large and small particles uniformly distributed through the mass and to have freedom from pockets or even very small spaces not occupied by mortar. It is desirable that this condition be obtained with little effort and expense. This property of the concrete is now known as workability or mobility. The means of measuring the degree of workability of concrete so far devised are not fully satisfactory. The slump test is at best applicable to comparisons with the same gradations of materials and the same richness of mixture; for comparisons with widely different materials and richness, it is crude. The flow table is a better instrument for general comparative purposes, since the jar produced by the drop tends to overcome the viscosity of the mixture; it does not, however, take into account all conditions that enter into the workability of concrete. In considering the workability of concrete it is well to keep in mind that the cement, fine aggregate, coarse aggregate, and water—in amount or nature—each has a bearing on the workability of the mixture.

At the drier mixtures, a mixture rich in cement has sufficient viscosity to give low workability to the concrete. With the addition of water beyond the basic water content the effect of the presence of the larger amount of cement is to increase the workability.

A fine sand acts somewhat as does the cement. With a fine sand the voids in the mortar are not filled until a high relative water content is reached, and a noticeable effect of the increase in mixing water upon mobility is not found until considerable water has been added. With a coarse sand this condition is not apparent.

Water aids in lubrication. An increase in the mixing water beyond the point where the air voids become relatively small increases the workability, but a point is finally reached where the addition of water has little effect.

The shape of the particles of the coarse aggregate affects the mobility of the mixture, especially in a coarse mixture. Round particles make a most easily worked concrete. As may be expected, broken stone with rough surfaces and marked angularity gives difficulty in placing, especially when its amount is close to the upper limit of what may be put into concrete. A very well-graded coarse aggregate is less easily worked than one of more nearly uniform size, at and near the upper limit of *b*. When the amount of coarse aggregate used is decreased to values well below the upper limit, the workability of the concrete is improved, and it is possible by such a change to effect a decreased relative water content and yet secure increased mobility with no loss in strength.

The usual method of trying to secure increased workability is to increase the amount of the mixing water. This method is fairly effective through a certain range, say perhaps from a relative water content of 1.10 to 1.50, the limits depending upon the richness of the mixture, the nature of the fine aggregate and the coarse aggregate and other matters. Beyond this range, the excess of water has little effect on workability and tends to produce segregation in the mass, and the water will not remain uniformly distributed throughout the concrete.

In using added water to improve workability, it should always be kept in mind that the presence of additional water beyond what is termed the basic water content results in decreased strength in the concrete. In many cases the addition of 50 per cent of water to the amount which will give what is ordinarily termed normal consistency will produce a concrete having only about one-half the strength of that at basic water content. In many cases it will be possible to obtain the requisite mobility in other ways, such as a decrease in the value of *b*, and to maintain much of the strength lost through adding water. Frequently, excess water is used through lack of knowledge of the great loss of strength resulting.

The elements affecting workability and the means that may be used to improve it are worthy of much more study and investigation than have yet been given to the problem.

From "The Strength of Concrete, Its Relation to the Cement Aggregates and Water," by Arthur N. Talket and Frank E. Richart, "University of Illinois Bulletin."

Announcements

Edward M. Adelsohn, registered architect and engineer, announces the opening of his new offices in the new Municipal Bank Office Building, Pitkin Avenue, corner Stone Avenue, Brooklyn, on the fourth floor, Rooms 404, 405, 406.

Frank Grad, architect, A. I. A., announces the removal of his offices to 1023 Broad Street, Newark, N. J.

Samuel J. Berman, architect, announces the removal of his offices to 3030 Euclid Avenue, Cleveland, Ohio, and will be pleased to receive manufacturers' samples and catalogues.

Harry J. Brumenshenkel announces that J. Leonard Rush, formerly connected with Vernon Redding and Associates, architects, Mansfield, Ohio, is to be associated with him in the general practice of architecture. Offices, 42 Park Avenue, West, Mansfield, Ohio. Manufacturers please send samples and catalogues.

Smithey & Tardy, architects and engineers, announce that they have moved their offices from 730–732 Anchor Building to 112 Kirk Avenue, S. W., Roanoke, Va.

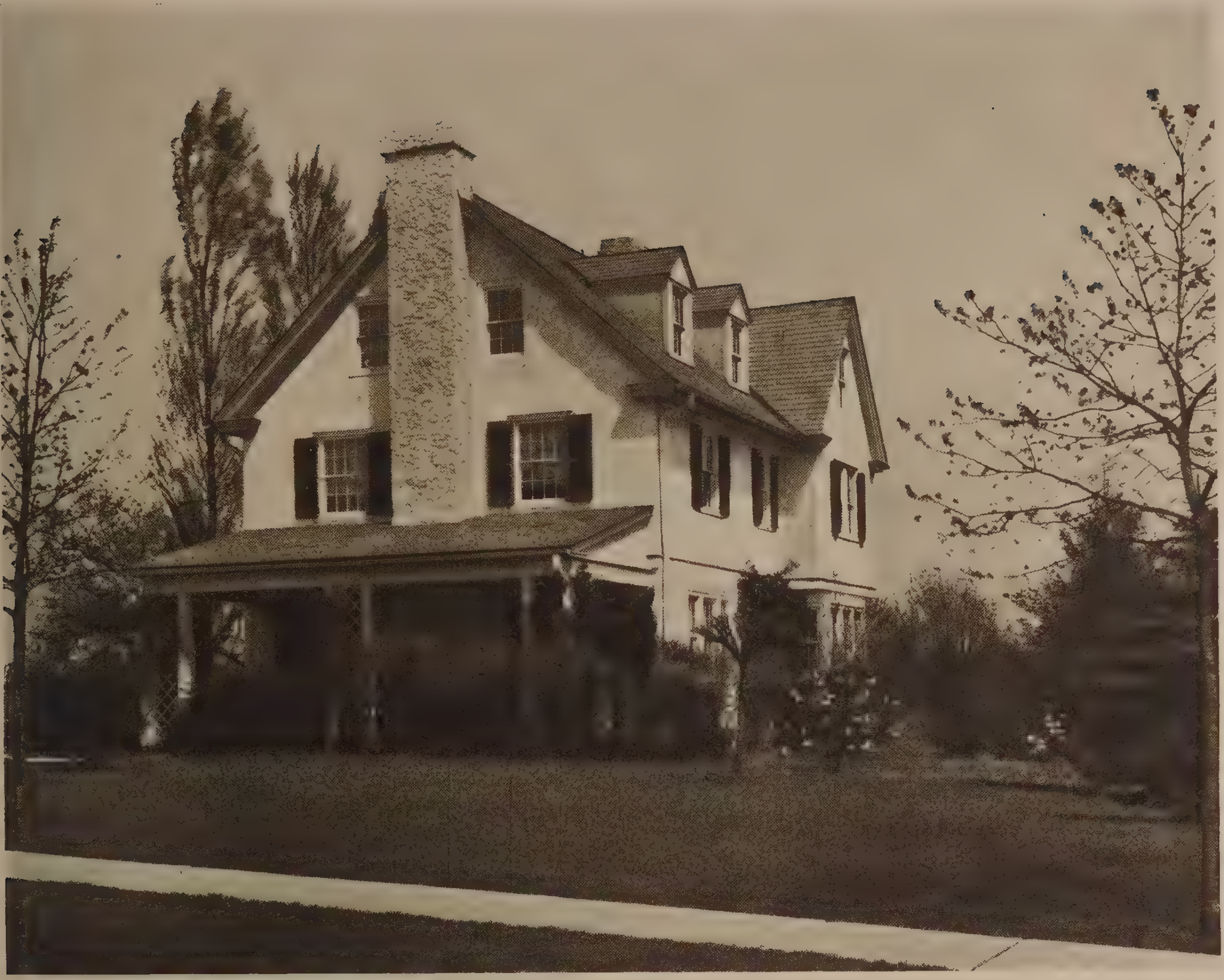
B. Albert Comm, architect, announces the opening of his office for the general practice of architecture at 20 West Jackson Boulevard, suite 1615, telephone Harrison 4585, Chicago, Ills. Bulletins and catalogues requested.

C. Howard Crane, architect, and Elmer George Kiehler, associate, announce the admission of Ben A. Dore, for four years associated with them as chief designer, as a member of the firm. Prior to his connection with Mr. Crane, Mr. Dore was chief architectural designer for the Dominion government.

Bertram N. Marcus, having discontinued his association with Messrs. Simon I. Schwartz and Arthur Gross, with whom he was practising architecture under the firm name of Schwartz & Gross—B. N. Marcus, announces the opening of architectural offices at 145 West 57th Street, New York.

The following bulletins from the Edison Lamp Works contain information of special value: "The Lighting of Woodworking Plants," "Automobile, Garage, and Display Room Lighting," "Street Lighting with Mazda Lamps," "The Lighting of Textile Mills," "Lighting of the Food Industries," "The Lighting of Paper and Pulp Mills."

The Sanymetal Products Co., Cleveland, Ohio, are sending out a new pamphlet about their Sanymetal partitions for toilet rooms.



·The
JOSEPH·E·WILSON
House·at·Springfield
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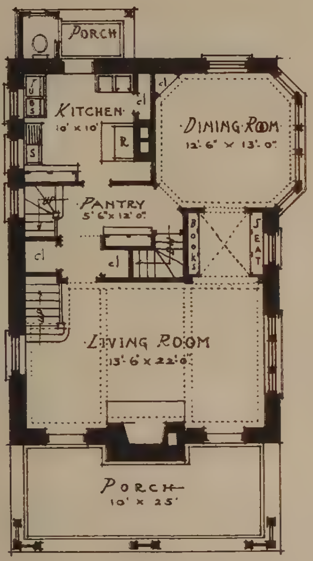
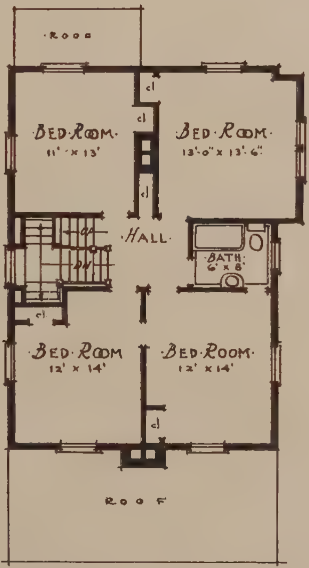
Architect·
·PHILADELPHIA·



·FIRST·FLOOR·PLAN·



SECOND·FLOOR·PLAN·

Lectures to Mark the Opening of the Wing of American Decorative Arts of the Metropolitan Museum of Art

THE following two courses of lectures are planned to mark the opening of the Wing of American Decorative Arts, given by Mr. and Mrs. Robert W. de Forest. The first series of eight lectures, to be given on Mondays from November 17 to January 4, in the Lecture Hall, will seek to present a general view of the various phases of art which are exemplified in the collections of the new wing.

The second series of seven talks, to be given on the Tuesdays following, November 18 to December 30, in the galleries of the wing itself, will take up in a less formal manner the objects exhibited under the same general headings as those adopted for the first course. Those desiring to follow this course will assemble at half-past three o'clock in Class Room B, where the first part of the talk will be given, before adjourning to the galleries of the wing.

Attention is called to the lectures to be given by Herbert Cescinsky on March 15 and 22, 1925, at four o'clock, upon "The Influence of Architecture on English Furniture," and "The Minor Craftsmen in English Furniture."

MONDAYS, NOVEMBER 17 TO JANUARY 5

In the Lecture Hall

1924: November 17, "The American Wing—Its Character and Its Purpose," R. T. H. Halsey. November 24, "Architecture of the Seventeenth Century," Norman M. Isham. December 1, "Domestic Life in the Seventeenth Century," George Francis Dow. December 8, "Domestic Architecture, 1700–1775," Fiske Kimball. December 15, "The Arts of the Eighteenth Century," R. T. H. Halsey. December 22, "Domestic Architecture in the Late Eighteenth Century," Fiske Kimball. December 29, "American Furniture," Edwin J. Hipkiss.

1925: January 5, "American Painting," Royal Cortissoz.

TUESDAYS, NOVEMBER 18 TO DECEMBER 30

In the Galleries of the American Wing

1924: November 18, "The American Wing—the Scheme of Arrangement," Charles O. Cornelius. November 25, "The Arts of the Seventeenth Century," Charles O. Cornelius. December 2, "Pre-Revolutionary Art in the Eighteenth Century," Charles O. Cornelius. December 9, "Interiors of the Early Nineteenth Century," Charles O. Cornelius. December 16, "Foreign Influences in American Furniture," Preston A. Remington. December 23, "Design Influences in American Silver," C. Louise Avery. December 30, "Early American Painting," H. B. Wehle.

Winners of the "Country Life" Competition

MR. John Russell Pope, Mr. Alexander B. Trowbridge, and Mr. Reginald T. Townsend, the editor, judges in the *Country Life* Contest for the best designs for a country home for the man of moderate means, have made the following decisions:

First prize, Alfred Cookman Cass, Philadelphia, Pa.

First honorable mention, Henry A. Cook, 101 Park Avenue, New York.

Second honorable mention, John Floyd Yewell, 10 East 43d Street, New York.

Third honorable mention, H. Ross Wiggs, 680 Fifth Avenue, New York.

In addition to these for general excellence of design and plan, twelve more were most favorably mentioned. These were:

Leslie W. Devereux, Utica, N. Y.; C. W. Lemmon and F. H. Stanton, Los Angeles, Calif.; I. Pendlebury, New York; Owen L. Gowman, New York; Charles Kenneth Clinton, New York; Polhemus & Coffin, New York; Francis Keally, New York; Richard I. Brumbaugh, Denison, Texas; Alfred F. Schimek, Chicago, Ills.; D. M. Allison and R. O. Dorwin, Cleveland, Ohio; William Adams Delano, New York; Michael J. Hoffman, Jr., Buffalo, N. Y.

Competition of "House Beautiful" Cover Designs

THE success of the cover competitions held the last two years has led the *House Beautiful* to repeat this event and again to offer two prizes, one of $500 and one of $250 to the successful contestants. A number of honorable mentions will also be given. The competition closes February 7, 1925. Full particulars regarding the competition may be had on application from the Competition Committee, House Beautiful, 8 Arlington Street, Boston, Mass.

The Chicago Architectural Exhibition League Exhibition

THE Chicago Architectural Exhibition League Exhibition which has heretofore been held in the East Wing will be held next year in Blackstone Hall of the Art Institute. The exhibit will be held in February instead of in May, as formerly, in order that it may be forwarded to the National Exhibition, which will be held in the Grand Central Palace in New York next April.

Drawings will be received up to December 20th; entrance blanks may be obtained from Pierre Blouke, 721 N. Michigan Avenue, Chicago, Ills.

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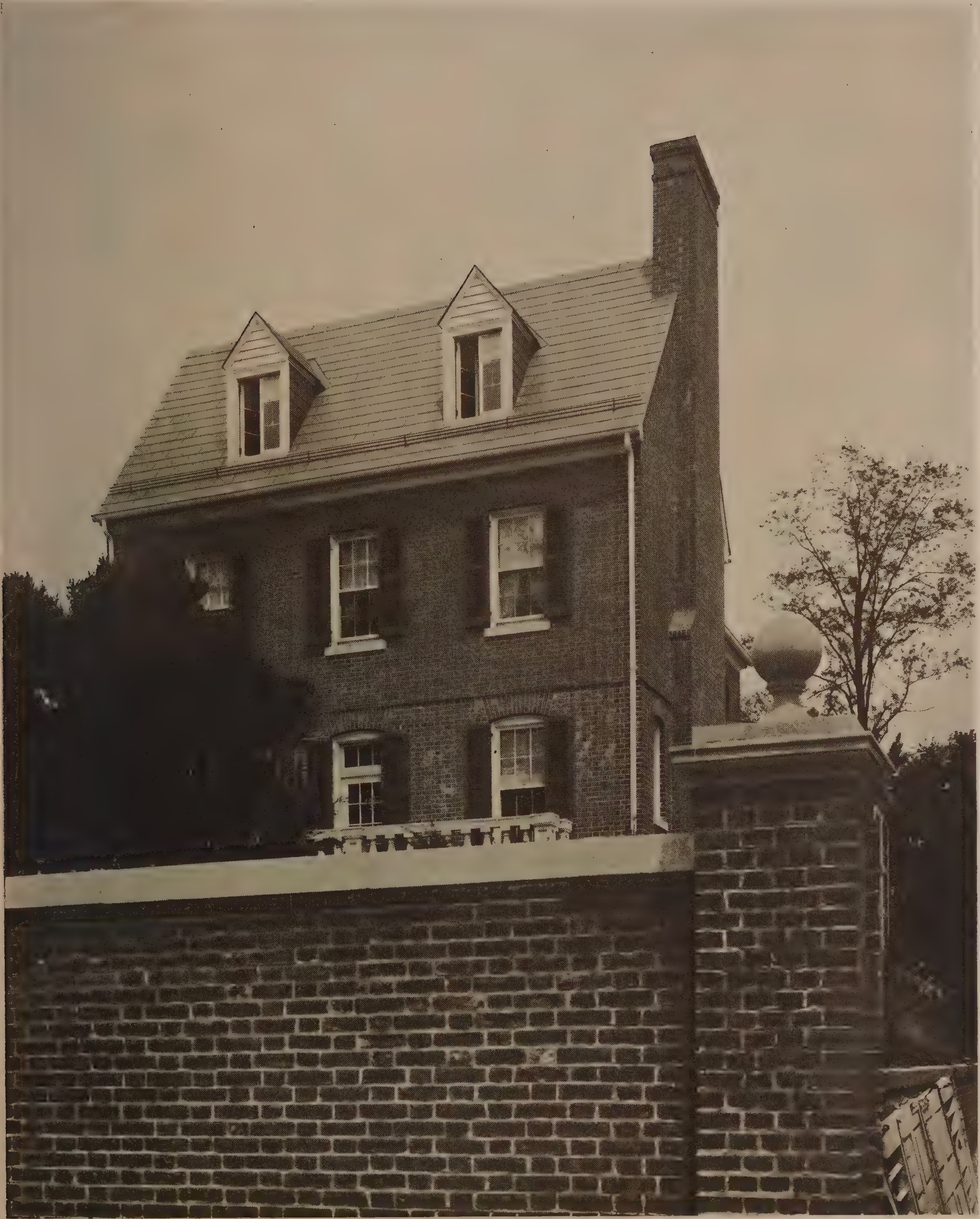
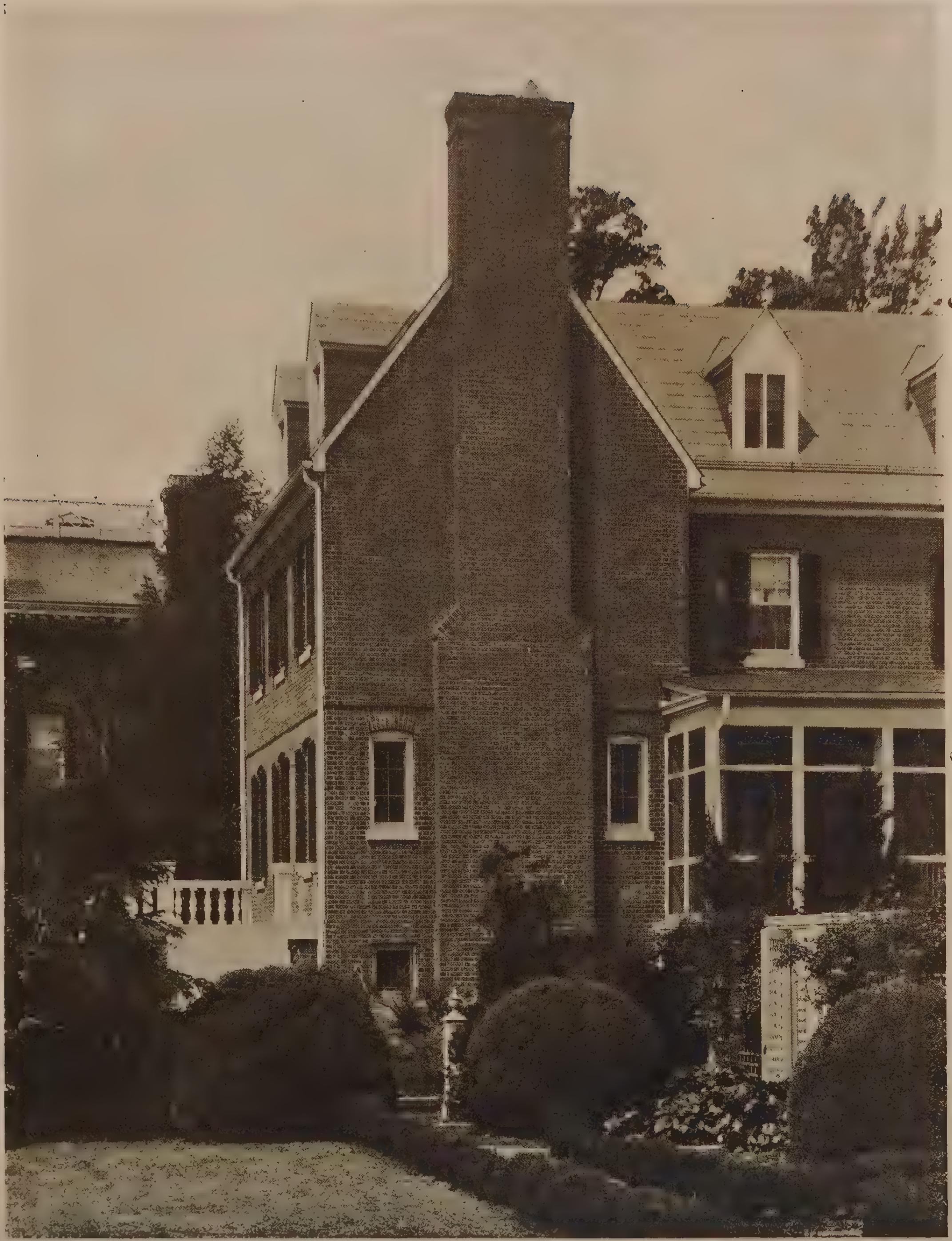
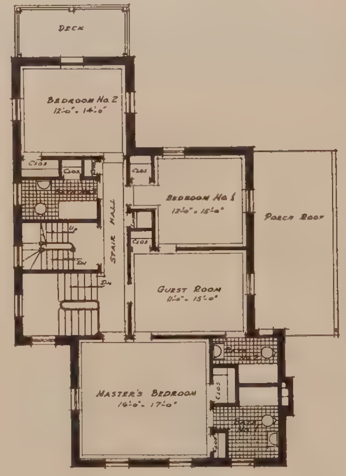


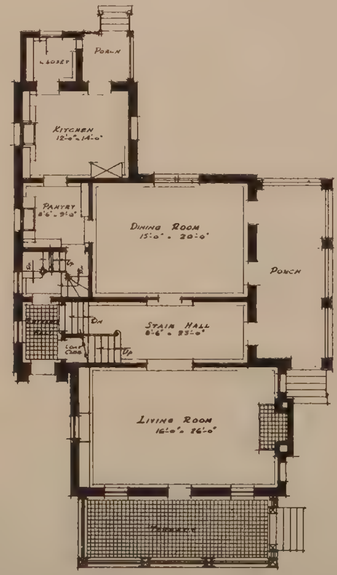
RESIDENCE, FRANK S. BRIGHT, WASHINGTON, D. C. Delos H. Smith, Architect.



DETAIL, RESIDENCE FRANK S. BRIGHT, WASHINGTON, D. C.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Delos H. Smith, Architect.

An Architect's Simple Engineering Problems

By DeWitt Clinton Pond, M.A.

Author of "Concrete Construction for Architects," "Drafting-Room Mathematics," etc.

THERE are any number of small problems of an engineering nature which arise in the daily routine of an architect's work and which can be easily solved provided an ordinary knowledge of arithmetic and a little knowledge of engineering can be made use of. What will be brought out in the following article will be simply an attempt to explain the processes used in arriving at such conclusions as the thickness of concrete slabs and the sizes of beams when the most commonplace conditions occur, but there will be no attempt to explain the more complicated methods of deriving the formulas, and therefore a warning should be borne in mind to confine the results given in this article to other problems of a very similar nature. When complicated loading on beams or floors is part of a problem, a wider range of knowledge will be required to solve it than can be obtained from this outline.

The peculiar part of most engineering problems is that the greater part of the calculations has little to do with actual engineering design. In order to design a beam or a slab to withstand certain loading the engineer must first determine what the loads actually are. Now, there is nothing particularly difficult in observing that if a square foot of concrete slab weighs 12 pounds for each inch of its depth, a 4-inch slab will weigh 48 pounds. All this and most of the results obtained in the following paragraphs can be obtained by means of the most rudimentary arithmetic, such as a school boy knows.

Perhaps a certain difficulty might arise in finding out that the slab weighs 12 pounds for each foot of depth, but every architect is familiar with the Building Code of his city, and if it is adequate at all it will have listed the allowed weights of most building materials.

In New York he simply will have to refer to the index of the Building Code and find "Weights of Materials," and by looking at Section 21, on page 12, he will find a list giving the assumed weights of various materials in pounds per cubic foot in which are the following:

Concrete, cinder, used for floor arches or slabs	108
Concrete, cinder, used for filling over fireproof floor	60
Concrete, stone	144

Other codes have similar lists and give approximately the same weights for these materials. It will be noted that the weights are given for each cubic foot of the materials, and so for the weight of one inch of slab or floor it will be necessary to divide the assumed weight by 12. Thus, if stone concrete weighs 144 pounds per cubic foot, one inch of slab for an area of floor one foot square will weigh 144 ÷ 12 = 12 pounds.

A square foot of cinder concrete slab will weigh 9 pounds for each inch of thickness and fill will weigh 5 pounds. This is rudimentary arithmetic again, and has nothing to do with strictly engineering design.

The Building Code can also be used as a text-book when the thickness of the slab is to be determined, and the reinforcement, under the general heading of "Fireproof Construction," and particularly under the sub-heading of "Concrete Floor Arches." Here it will be found that except under certain conditions floor slabs must not be less than 4 inches, so by reference to the code and by ordinary arithmetic it can be seen that the commonly encountered floor arch will weigh 48 pounds per square foot of floor area if it is of stone concrete, or 36 pounds if it is of cinder concrete.

It will be noticed that the weights of the arches have been determined on the basis of one square foot of floor area. This is the common practice; it being recognized that if the weight of such a unit is determined, it will be no difficult matter to multiply by the number of square feet of floor that a slab or beam carries and to determine the load on these supporting members.

Here again the problem resolves itself into such simple terms as are found in Young America's arithmetics. If a square foot of floor weighs 100 pounds and a beam carries a section of floor 8 feet wide and 17 feet long, how much weight will the beam support? It is that kind of a problem.

Therefore the first requirement is to find what one square foot of floor will weigh and how much load it will have to carry besides its own weight.

It will be noticed that there are really two loads: the actual weight of the slab with the plaster or flooring on it, which forms what is known as the "dead load," and the weight which such a slab must carry on it, or the "live load." So far one part of the dead load of the ordinary concrete slab has been found to be 48 or 36 pounds, depending upon whether it is made of stone or cinder concrete.

Now it depends almost entirely upon architectural considerations as to what additional loads may be added to that of the slab. If it is required to plaster the under side of the slab a load of 8 pounds per square foot must be added. If it is thought necessary to have fill on top of the slab, in which steam pipes or conduit may be run, it will be necessary to multiply the weight of each inch of fill by 5 pounds, as given above, in order to find what must be added to the dead load to account for all conditions. A 3-inch fill will weigh 15 pounds; a 2-inch fill 10 pounds.

Cement finish weighs 12 pounds, so the dead load resulting from the use of a 4-inch stone concrete slab plastered on the bottom, with 2 inches of fill on top and 1-inch cement finish, will be found by the following addition:

Slab	48	pounds
Plaster	8	"
Fill	10	"
Finish	12	"
	78	"

This is the total dead load of the floor-arch construction, and it can be seen that there is absolutely nothing difficult in determining it.

Later it will be seen that the weight of the steel beam must be added to this, as well as the concrete fire-proofing around the beam, but for the present this will not be necessary.

Of course this item of dead load may vary in many ways. It may be decided to leave out the plaster and the fill and even finish the arch with what is known as an "integral" finish, or actually work the finish in the arch construction itself. In this case the dead load would be simply 48 pounds. Or it may be decided to use cinder concrete with plaster and a 1-inch finish on top with no fill. In this case the load would be:

Slab	36	pounds
Plaster	8	"
Finish	12	"
	56	"

It might be worth while to note that where cinder concrete is used it is usually necessary to plaster the soffit of the arch.

As far as the dead load of the arch is concerned this is all there is to it. No difficult mathematical problems are involved and, so far, no knowledge of engineering.

The live load is even more easily determined, as it can be found listed directly in the Building Code. In New York the allowed live load on the floor of a residential building is listed as 40 pounds, of an office building 60 pounds, of a school 75 pounds, and of places of assembly 100 pounds. All that it is necessary for the architect to do is to select the load for the type of building he is designing.

Assuming that the building is to be used for residential purposes, such as a dormitory building for a school, then the total live and dead load per square foot might be determined as follows:

Dead load:	Finish	12	pounds
	Slab	48	"
	Plaster	8	"
		68	"
Live load		40	"
Total		108	"

Say 110 pounds.

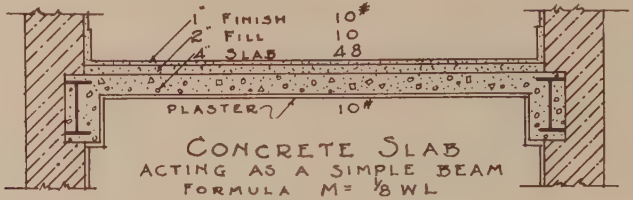
The next consideration will be an engineering one, for it will involve the design of the slab itself. In order to make the problem a practical one it will be necessary to assume certain conditions. The ordinary concrete slab spans between steel beams set about 8 feet on centres. Therefore it will be assumed that the span of the slab will be 8 feet. When slabs are designed it is assumed that they are divided into imaginary strips 1 foot wide and a single strip is designed separately. In the case of the residence building given above a load of 110 pounds per square foot extending over an area 1 foot wide and 8 feet long will weigh:

$$110 \times 8 = 880 \text{ pounds.}$$

Now when a load upon a slab or beam is known the next step is to determine the size of support that will be required to carry such a load, and so engineering formulas are used. The slab is assumed to resist the tendency of the load —880 pounds in this case—to bend it and break it by pulling the bottom particles apart and crushing the top ones together. Concrete is not supposed to have any resistance to a pulling stress, so steel is introduced in the bottom of a slab to withstand such a pull—tension—and the concrete at the top of the slab resists the crushing or compression stresses. In order to find what the tension and compression on stresses are that must be resisted by the steel and concrete these formulas are generally made use of. They are:

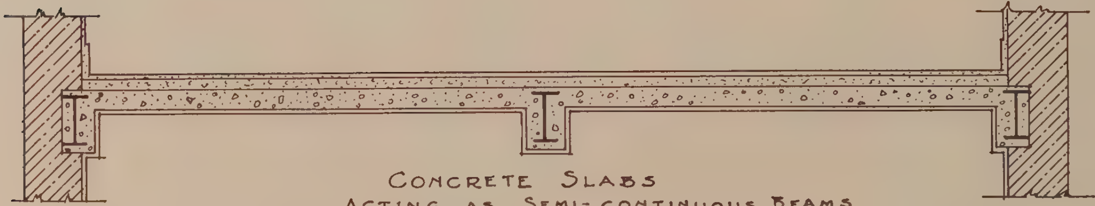
$M = \frac{1}{8} W L$ (simple beam)
$M = \frac{1}{10} W L$ (semi-continuous beam)
$M = \frac{1}{12} W L$ (continuous beam)

A simple beam is shown in Fig. 1, two semi-continu-



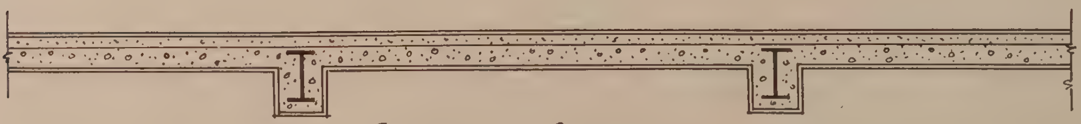
CONCRETE SLAB
ACTING AS A SIMPLE BEAM
FORMULA $M = \frac{1}{8} WL$

FIGURE 1



CONCRETE SLABS
ACTING AS SEMI-CONTINUOUS BEAMS
FORMULA $M = \frac{1}{10} WL$

FIGURE 2



CONCRETE SLABS
ACTING AS CONTINUOUS BEAMS
FORMULA $M = \frac{1}{12} WL$

FIGURE 3

ous beams are shown in Fig. 2, and continuous beams are shown in Fig. 3

It is hardly necessary to explain these figures, as they are almost self-explanatory. The simple beam rests between two supports and there is no restraint upon the bending. A semi-continuous beam is restrained at one end and not at the other, and a continuous beam is restrained at both ends. It will be seen that as the restraint increases at the ends the tendency toward bending—noted as M in the formulas—becomes less, by the difference between one-eighth and one-twelfth.

There are three letters in the formulas. M, as has been explained, denotes the tendency toward bending. W is the load—in this case 880 pounds—and L is the length of the span in feet—in this case 8 feet.

In case the slab were acting as a continuous beam, which is usually the case, M for the problem given above can be found without much difficulty by substituting in the formula 880 for W and 8 for L:

$$M = \quad \times 880 \text{ pounds} \times 8 \text{ feet} = 587 \text{ foot pounds.}$$

It will be seen that the tendency toward bending is expressed as 587 foot pounds, and this is natural because it is obtained by multiplying pounds by feet. Expressed in engineering language the *bending moment* (tendency toward bending) is 587 foot pounds, but as it is required that the result shall be in *inch* pounds the final result can be obtained by multiplying by 12, which will give 7,044 inch pounds.

All of this last part must seem very much a matter of theory, but it has a very practical value, for in order to determine the depth of a slab it is necessary to know what the moment, or tendency toward bending, is in inch pounds.

In the next article it will be shown that from the point where the moment is determined there is very little difficulty in finding the thickness of the slab or the area of steel required to withstand the bending stresses.

(To be continued.)

(*Continued from page* 369)

soaring spire to its climax—the gilded cross held five hundred and fifty-six feet above the sidewalk.

The great height of the building in its relation to the lot area suggested, if not demanded, the use of the Gothic style.

Thus it is that the structure is strongly mediæval in character, both from the generally accepted viewpoint of design and in the sense of its being arranged to house a group of varying activities.

The dignified exterior is of stone with a stone base and shop fronts of ornamental iron. Because the Auditorium is situated on the inside corner of the lot, it was impossible to give external expression to it, but this loss is fully compensated by the cathedrallike entrance on Clark Street. Its lofty archway encloses a rose window, and the unusual metal screen and tinted, leaded glass of the doorways plainly indicate its spiritual nature. The second floor, devoted entirely to church rooms, is distinguished from the other floors by the use of arcaded openings, with leaded glass windows.

The emphasis in the design as a whole, however, is vertical rather than horizontal. The piers rise in one sweep from the sidewalk to the receding terminal pinnacles, which flank the buttress of the tower.

Freed from the restraint of the horizontal lines occurring at the floor levels of the main building, the tower structure rises vigorously skyward. It is divided into three stages, each setting back upon the other, octagonal in form. The spire is considered as a continuity in a vertical direction of the tower itself.

On the interior the building is no less beautiful. The church auditorium and Sunday-school rooms are approached from the Clark Street entrance. Through bronze doors one enters the vaulted vestibule, thence to the main foyer. With its marble floor, arcaded walls of stone and beautifully painted ceiling, the foyer conveys something of the impression of a mediæval cloister, an impression which prepares one for the auditorium itself. This lofty room measures fifty-one by one hundred and two feet and is increased one hundred and sixteen feet in length at the balcony level. It is arranged to seat approximately eight hundred on the first floor and four hundred in the balcony and is provided with all equipment necessary for the illustration of lectures, etc. The walls are heavily panelled in quarter-sawed white oak, as are the enclosed trusses, ceiling beams and rafters. Great distinction is given the room by the use of painted decorations on ceilings, etc., and the main lines of all decorative members, together with those of the aisles, trusses, etc., give a strong sense of direction toward the rostrum. The floor of the rostrum is raised and the enclosing space is vaulted over in a manner reminiscent of mediæval rood screens. All illumination is artificial, as there are no outside windows.

The second floor foyer opening onto the balcony and the Sunday-school rooms is more intimate in character, having simple flush panelled walls of oak, a Batesville marble floor and a coved plaster ceiling. The Sunday-school rooms and parlors are closely related in treatment.

This new building was made possible in 1903 by the Dixon Act, permitting the demolition of the old building, which had stood for fifty years. Under the charter of the church, the net income from the building is used for the erection of new churches in the city of Chicago, and so far one million dollars has been given for this purpose.

The Chicago Temple is one of the most talked-of buildings in the country. It is a pioneer in the field of the church-office building and its example will, no doubt, be followed in many other cities.

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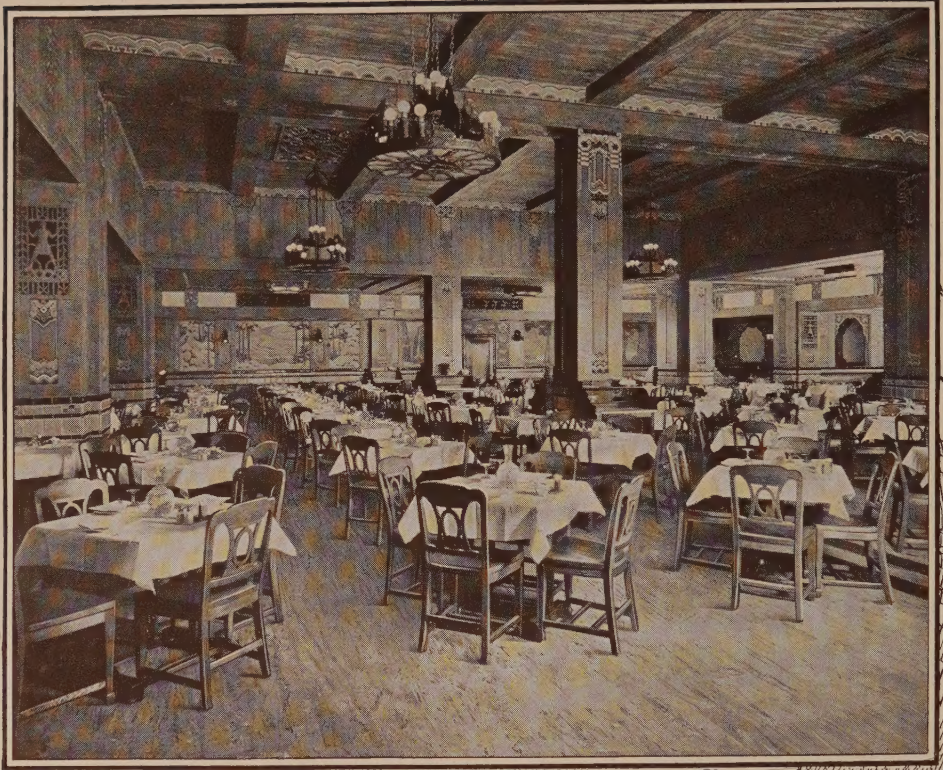
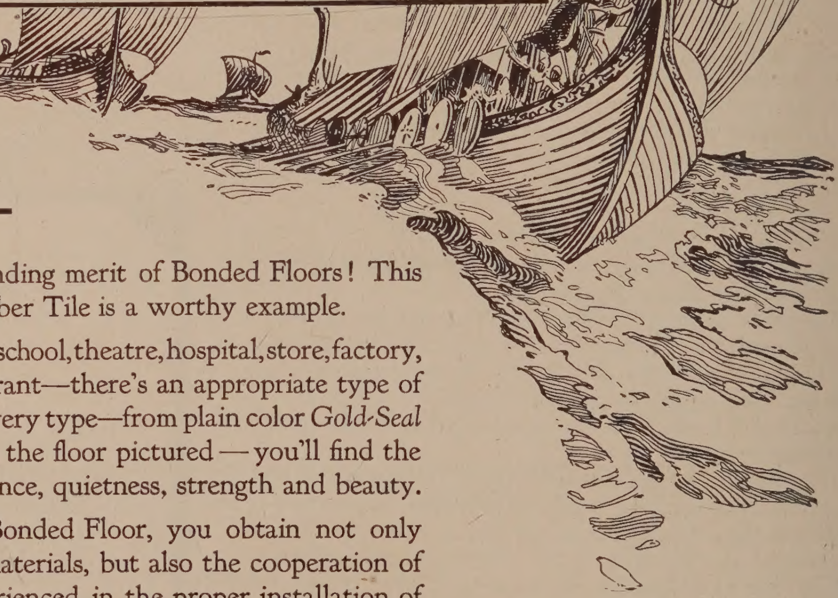


Photo by M. E. Hewitt

The Pershing Square Savarin Restaurant, New York, is a masterly interpretation of the art of early Scandinavian craftsmen. A modern but harmonious note is the floor of *Gold-Seal* Marbleized Rubber Tile in light sienna, creating the luxurious effect of tesselated marble. Architects: John J. Petit and Trygve Hammer.



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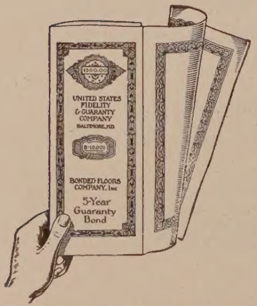
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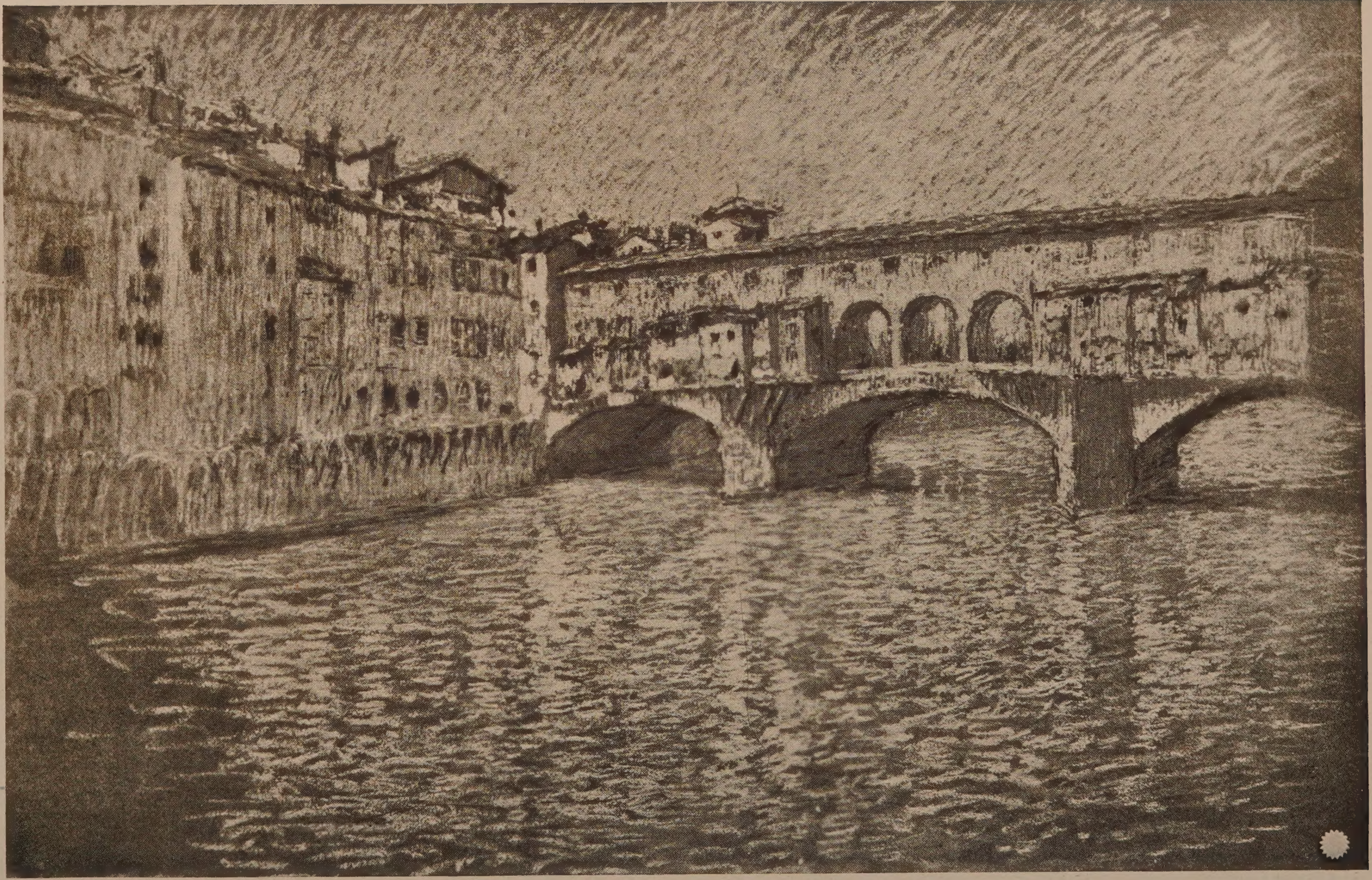

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